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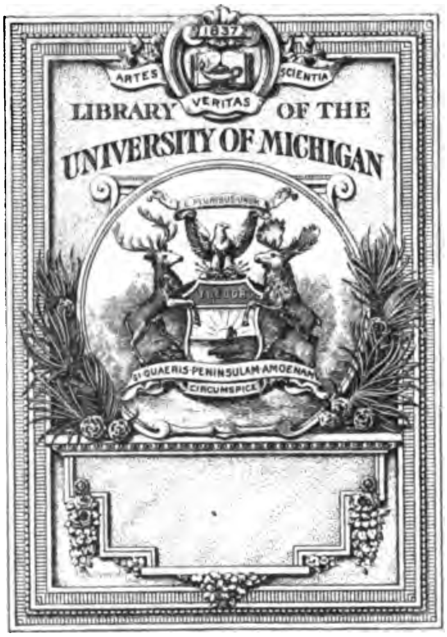

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INDEX TO VOLUME VII.

A. Page

- Abstruse science and industrial development ... 437
- Acetamide, manufacture of ... 404
- Acetic acid as a menstruum ... 277
- Aconite research, results of the...163, 182
  - late developments in. 120
- "A Daniel Come to Judgment" ... 389
- Adhesive pomade, antiseptic—formula for... 162
- Adonite ... 359
- Adulterated borax ... 333
- A Few Remarks ... 151
- Affiliation, A Fitting ... 394
- Agopyrin ... 87
- Air, solid and visible ... 162
- Alcohol in witch hazel extract, percentage of ... 408
  - —the discovery of ... 250
  - —therapeutics of ... 373
- Alkaloidal assay of drugs ... 137
- Alkaloid of the Geoffroya barks ... 133
- Alkaloids, formation of in the body... 502
  - of Aconitum Napellus ... 182
  - of cod-liver oil ... 180
  - of ipecacuanha ... 382
  - new ... 276, 283
  - reactions of certain ... 39
  - toxic and non-toxic, and ptomaines ... 194
  - volumetric determination of. 38
- Aloin per rectum ... 278
- Alumnol as an antiseptic astringent... 325
- American Pharmaceutical Association, forty-first annual meeting of.. 149
  - ——Officers, committees, etc., for 1892–93 ... 169
  - ——Proceedings of the forty-first annual meeting ... 360
- American work in bibliography ... 532
- Ammonia, aromatic spirit of ... 252
- Ammonium permanganate, how made. 549
- An Abuse of Journalism ... 438
- Anacharis absinastrum, uses of ... 135
- Anæsthesia, relations of physical condition to ... 502
- Analgesics, new ... 27
- Analyses, differing results of ... 122
- Analysis of coal-tar colors ... 180
  - of some ethical patent medicines ... 489
- Animal alkaloids ... 502
  - charcoal as a pill excipient.... 327
  - oils and fats used in pharmacy 296, 344
- Anise-seed cordial, formula for ... 162
- Anodyne, a new ... 276
- Answers to correspondents (botanical) 161, 208, 351, 451, 501
- Antagonism, therapeutical, of drugs.. 504
- Antidotes for poisons ... 278
- Antikol, a patented extortion ... 134
- Antinervine, composition of ... 468
  - therapeutics of ... 136
- Antipyretics, new ... 276
  - a physician who never uses ... 212
  - popular—synonymy of.. 42
- Antisepsis by cinnamon ... 515
- Antiseptic powder, improved—formula for ... 162
- Antiseptics and disinfectants ... 26
- Antispasmine, a new narcotic ... 179
- Antitetanine ... 73

Page

- Apparatus for dispensing lime-water.. 131
  - magnesium light, a cheap ... 181
- Apprentices, preliminary requirements concerning ... 491
- Aroma of violets, synthetic ... 552
- Arrow-poisons.....255, 269, 280, 374, 504
- Arrowroot, Zanzibar ... 180
- Arsenic in organic bodies ... 558
  - poisoning, action of ferric hydroxide in ... 558
- Artificial honey, test for ... 254
- Asbolin, from wood-soot ... 136
- Assay, alkaloidal, of drugs ... 137
  - of drugs and galenicals ... 535
  - of emetine ... 137
- Atomic weight and physiological effect. 28
  - —relation of to specific gravity ... 495
- Attention, Drug Trade ... 316
- Attfield, Prof. John, F. R. S.—sketch and portrait ... 1
  - to the Pharmacopœia committee ... 312
- AUFMWASSER, H. W.—paper by ... 307
- Australian letter ... 29
  - sassafras, action of the volatile oil of ... 132
- Austrian apothecaries and the World's Fair ... 197
  - pharmacy in financial straits. 141

B.

- Bacteria, effect of light on ... 564
- Bad breath, some gargles for ... 163
- Balata ... 42
- Barium salts, tonic effects of ... 165
- Barks, tonic—notes on ... 110
- Barometer, chemical—how to make... 408
- Bath powder, formula for ... 162
- Bath-soap (Pasta Mack), formula for.. 118
- Battery, Bunsen's ... 558
- Beauty powder, formula for ... 163
- Beechnut oil as a substitute for olive oil ... 564
- Beeswax adulterated ... 411
- Belladonna leaves and roots ... 410
- Benzene in influenza ... 550
- Benzoyl-pseudotropeine (Tropacocaine?) ... 176
- Berlin letter..26, 75, 121, 166, 212, 256, 314, 373, 412, 455, 503
- BERTHELOT—paper by ... 250
- Betrand's anti-neuralgic pomade, formula of ... 163
- Bicycling from a medical standpoint.. 195, 568
- Bilberry extract in diabetes ... 166
  - fruit in sequelæ of gonorrhœa 76
  - leaves in diabetes ... 76
- Bismuth in elixir ... 310
- Bismuth phenol, the patented process for making.. ... 500
- Black haw (Viburnum prunifolium) in uterine affections ... 28
- Bleaching sections ... 515
- Blood, a chemical test for ... 257
- Blow-pipe arrangement, a new ... 559
- BODEMANN, W.—paper by ... 395
- Boiled water in an envelope ... 501
- BRAUNWORTH, ALICE L.—paper by... 62
- BOOK REVIEWS:
  - Annual of the Universal Medical Sciences ... ...

BOOK REVIEWS—*Continued.* Page

  - Brevans: Manufacture of liquors and preserves ... 319
  - Browning: Modern homœopathy... 223
  - Collin: Guide to the determination of official powders ... 319
  - Flückiger; Reactions ... 418
  - Gould: New illustrated dictionary of medicine, biology, and collateral sciences ... 462
  - Hare: Text-book of practical therapeutics ... 82
  - Kirchoff: Handbook of insanity.... 171
  - Legislative Manual of Michigan.... 267
  - Leisure Library, recent numbers of. 418
  - Lexicon of pharmaceutical synonyms in various languages.. ... 508
  - Loomis: Lessons in physical diagnosis ... 267
  - Maiden: Bibliography of Australian economic botany ... 83
    - Vegetable exudations ... 83
  - Martin: Impotence and sexual weakness ... 266
  - Nordstedt: Australian Characeæ ... 508
  - Oldberg: Pharmaceutical and chemical problems and exercises in metrology ... 266
  - Pharmacology of the newer materia medica ... 507
  - Sajous: Annual of the universal medical sciences ... 554
  - Secretary of Michigan Board of Health: Annual report ... 266
  - Simon: Manual of chemistry ... 223
  - Stockwell: The physician's perfect call-list ... 418, 555
  - Talamon: Appendicitis and perityphlitis ... 224
  - The religions of the world ... 506
  - Von Mueller: Select extra-tropical plants—eighth edition ... 554
- Boschee's German Syrup, formula for. 71
- Botanic garden, the proposed ... 186
- Botanical collections ... 130
  - terminology, suggested changes in ... 253
- Botany, recent work in ... 177
- Bottles, a new kind of protection ... 61
- Bottle-blowing by machinery ... 430
- Brandreth's pills, formula for ... 24
- Brandy in contagious fevers ... 213
- Bread-crumbs *vs.* crusts in therapeutics 165
- Brilliantine, solid—formula for ... 117
- British Pharmaceutical Conference ... 410
- Bromopyrin, a new derivative of antipyrin ... 179
- Bronze powder, manufacture of ... 279
- Brown-leather polish, formula for ... 162
- Brucine in arrow-poison ... 504
- Bunsen, Robert Wilhelm—achievements of ... 557
- Burns in children, treatment of ... 71
  - —mixture for relief of ... 209
- Business, the basis of successful ... 425

C.

- Caffeine and theine identical ... 38
  - —a new diuretic from ... 456
  - citrate in crystalline powder.. 311
  - —reactions of with auric chloride ... 38
- Calcium lactophosphate, syrup of ... 307
- Calisaya bark, detannated—elixir (formula) ... 210

Page
Calomel on cocaine and pilocarpine... 456
Camphor, artificial—method for making 499
in the East—production and trade 448
manufacture of............. 39
Cancer, origin of..................... 135
Cancroin in cancer.................. ... 89
Candidates for graduation, what should be required of?................401, 402
Cannabis Indica, use and abuse of.... 455
Carbolic acid, reddening of 256
Carbon bisulphide, new use for....... 277
compounds, serviceable modifications of................ 549
Cardine and cerebrine................ 379
Carpaine 277
—experiments with..... ... 139
Cascara in tape-worm 325
Cascarin and rhamnoxanthin......... 276
Castor bean in India—cultivation and oil-extraction...........271, 321
oil, adulterated............... 226
palatable................ 181
Caterpillars, sprays for.............. 256
Cathartic acid........................ 303
and its action.......... 246
—experiments with..... 504
per rectum.......... .. 278
Cathartics, subcutaneous and rectal employment of..................... 278
Cayenne pepper, soluble............. 453
Cement for cast iron 87
china, how to make...... 253
mortars, formula for...... 23
Centigrade scale supersedes the Reaumur 568
Cerberin (new), pharmacology of...... 181
Cereus grandiflorus, experiments with. 327
Chamomile, Roman and German..... 254
Chaps, to cure—formula for.......... 72
Charcot, Professor—obituary......... 423
Chemically pure....................... 157
Chemistry, achievements of.......... 99
of drugs..... 263
the need of more.......... 492
Chestnut bark, extract of............ 420
—Indian water............ 322
Chicago letter........31, 78, 124, 167, 259, 316, 414, 458, 504. 553
Chilblain cure........................ 33
tablet, formula for......... 117
China, European medicines in........ 380
Chloral hydrate, purity of in Michigan markets 448
Chloralose............. .... 165, 257
Chloraloximes 276
Chloroform from acetone and salt 311
—solid 138
Cholagogue, Indian—formula for..... 209
Cholera and the filtration of water.... 327
—bacteriologists baffled by... 454
Chrysarobin ointment, more cleanliness in the application of........... 503
Cicuta maculata, Linne.............. 86
Cincholine.......... 408
Cinchona febrifuge in India........... 41
Cinnamon as an antiseptic........... 515
Citric acid by fermentation.......... 503
Citrine ointment, spongy.... 253
Citrullin per rectum.................. 278
Clark, Sir Andrew.................... 532
Clark's Blood Mixture, formula for... 117
Clove industry of Zanzibar........... 115
Coal-tar products, prospects for 88
COBLENTZ, VIRGIL—paper by......... 357
Cocaine in otiatrics, value of......... 563
—test for.. 504
Coca leaves........................... 323
Cocillana............................ 125
—botany and pharmacognosy of...................... 350
—chemistry of 357
—clinical history and therapeutics of................ 354
Cocoa, Van Houten—attack on....... 255
Cod-liver oil emulsions, commercial—analytic notes on...... 273
—ferro-iodized — formula for.................. 162
—the alkaloids of 180
—wine of.............. 533
Coffearine, a new alkaloid from coffee. 456
COLEMAN, SHELDON—paper by....... 404
Collection of herbs, time for.......... 502
Colocynthin per rectum............. 278
Coloration of glass by the action of the sun 349
Coloring matters, new series of 326
of foods, the ethics of....... 565
Compound of iodine and lead, a new.. 135
Condurangin......................... 40
Confectio Democratis, formula of..... 409
CONRATH, ADAM—paper by.......... 252
Consumption, pulmonary, dangerous to the public health................ 517
"Controlling a Trade Convention"... 511
Convallaria majalis.................. 134
Copaiba, African.................... 411
balsam as a diuretic 563
Copper in foods..... 566
precipitated by iron.......... 253
Cordial, Mother's—formula for....... 24
Coricide, or Death to Corns—formula for.............................. 72
Cork-tying device, a new 232
Corn cure, formulas for 72, 210
paint, English jokes on......... 164
, wart, and bunion cure—formula for....................... 23
Cornutin in spermatorrhœa 413
Corrosive sublimate abandoned by Sir Joseph Lister .. 120
as a disinfectant.. 42
—persistence of .. 311
powders 119
solution, concentrated—formula for............ 117
Coryl, a new anæsthetic 87
as a local anæsthetic 231
Coto-bark, investigation of........... 410
origin of................ 76
Covers and slides, a substitute for glass. 44
Cream of tartar, solubility of in alcohol. 500
Creasotal.............. 136
Creasote pills for tuberculosis 167
—soluble.................. 311
—therapeutics of.... 137
Credit problem, the.................. 383
Cresotic acid......................... 135
Cross-checking prescriptions, convenience for.......................... 310
Crotonoleic acid...................... 202
Curacao liquor, formula for.. 117
Curcin and curcin oil................. 200
Curry powder, formulas for.......... 453
Cut rates, menace in................ 79

D.

Death, the proof of................... 186
Decimals the ultimate destiny........ 80
Densities, measurement of........... 276
Depilatories, five formulas for....326, 548
Diabetic parageusis—to overcome.... 504
Diabetics, sweets for................. 27
Diamonds artificially............227, 233
Diaphtherin, examination of 457
Digestive ferment, a new (white-fig tree juice) 134
Digitaline, dangerous difference between amorphous and crystalline. . 431
Digitalis, dosage of................. 28
DIMMITT, ADDISON—paper by........ 399
Diphtheria, have we a specific for?.... 334
preventive, formula for... 117
sublimed sulphur in...... 550
treated by tincture of myrrh and glycerin.... 374
Dipsomania, Dr. Mann's treatment of. 381
Gold Cure for 567
mixture for the cure of.. 162
Discovery of America, and its bearing on materia medica, Hartwich on.... 40
Disinfectant, corrosive sublimate as a. 42
for cholera stools....... 231
Disinfection by steam.... 258
Dispensing by physicians, reasons for. 539
———Comments on................ 531
Dispensing, heedless................. 569
Diuretic, a new...................... 276
wine, formula for........... 72
Doctors' profits...................... 324
DOERSCHUK, A. N.—paper by........ 495
DOHME, ALFRED R. L.—paper by.... 492
Dosage by drops, dangerous......... 551
Drug clerks, commission to.......... 506
different from other clerks 430
Druggists of France get the sale of two mercurial preparations.. 164
Drug store, successful method of conducting.................... 275
Duboisine, dubious identity of 412
therapeutic value of....... 412
Du Bois-Raymond, Emil............. 99
Dulcine a rival of saccharin.......... 87
Dyche, Dr. David—obituary......... 339

E.

Earth-spectra for identification of metals. 559
Eccles, Dr. R. G., and the Microbe-Killer........................... 290
Emetine, assay of................... 137
composition of............ 372
Electrolysis in the production of chloroform. 311
Electrolytic separation of metals...... 326
Employers, duties of to employés..... 194
Ergot, Kobert on 27
Eucalypteol... 136
—derivation, composition, and use of............. 254
Eucalyptus, demand for 43
oil, Indian............. 140
EWING, BENJ. H.—paper by......... 61
Examination queries, who could answer?............................ 549
Explosive prescription....... 231

F.

FABER, F.—paper by................ 448
Face-powder, swansdown—formula for 72
FACETIÆ....34, 84, 127, 172, 224, 267, 320, 377, 419, 463, 508, 555
FARWELL, O. A.—paper by 499
Fatty acids.......................... 408
Ferment, new soluble 233
Ferri phosphas, darkening of syrup containing..... 308
Fever drops (Warburg's), formula for.. 71
FINK, LEON C.—papers by......5, 60, 106, 151, 407

Page
Fire-extinguishers, solutions for charging 326
Fire in drug stores 291
Flashing-point of kerosene—apparatus for determining 309
Flavors, artificial 551
Flora of the Pharaohs 283
  of Willoughby Lake and Mountain 20
Florida toilet-water, formula for 72
Fluid extracts for standard tinctures 441, 533
  —the making of 122, 441
Fluid lightning, formula for 24
"Fluigram" 452
Foam syrup for soda-fountain, formula for 71
Formol, a new synthetic antiseptic 166
Fowler's solution, an incompatibility with 231
Fox, Dr. Fax—paper by 539
Francis, John M.—papers by 446, 541
Frankincense and pitcher-plants 67
Frost-bite, formulas for 43
Frosting glass 209
Fruit essences, value of natural and artificial 551
Fruits as medicines 232

G.

Gambier manufacture and trade 133
Galactagogue, a new 499
Gallanol, purified gallol 312
Galenical preparations, dialysis in 257
Gas-analysis, Bunsen's 558
Gelsemium, active constituents of 374
Gelsemium nitidum, two dangerous alkaloids in 550
General tonic, formula for 118
Generator, how to charge the 57
Geoffroya barks, alkaloid of 133
Gin, Holland—formula for 24
Ginger wine, formulas for 310
Glass-making, a problem in 348
Glass, to frost 209
Glycerin, physiological action of 311
Glycogenic function of the liver 213
Glykogelatin, a new salve-base 87
Gold indelible ink, formula for 117
Golden seal, fluid extract—examination of 306
Golden Tincture, formulas for 453
Gombault's Caustic Balsam—formula for 117
Grape sugar, a new reaction of 42
Green's August Flower, formula for 71
Guaiacol, synthetic 254
Guardia, J.—paper by 542
Gum arabic, artificial 359
Gymnocladus Canadensis 42

H.

Hæmol and Hæmogallol 77
Hairs of the Chœtophoraceæ 23
Hair-wash, tonic—formula for 118
Hamburg tea, formula for 23
Hammond and "organic extracts" 295
  and the medical profession 460
  vs. Parke, Davis & Co. 378, 416, 426
Harding, L. A.—paper by 307
"Hash" 60, 106
Hasheesh, preparation of 327, 427
Haynes, Mr., and the wholesale druggists 415
Hazlenut oil 515
Heat, effect of on opium and morphine 214

Page
Height of man 430
Helenin 88
Hemlock fruit, alkaloidal strength of 411
Hemp intoxication 567
Herbal, Gerard's 410
Holland pharmacy 185
Holmes, E. M.—paper by 67
  on the flora of the Riviera 25
  sketch and portrait 145
Hospitality, shabby 388
Hospitals of Paris 232
Hot-water drinking, limitations of 563
Hufeland's Infant Powder—formula of 209
Hydrastine bitartrate 231
  —reactions of 39
Hydrastis Canadensis, assay and examination of 305
  in night sweats 413
  , Viburnum, and Piscidia in menstrual troubles 76
Hydrogen peroxide, a rapid assay of 129
  comparison of some medicinal brands of 281
Hydroxanthaline, a new opium alkaloid 182
Hyoscine—is it scopolamine? 257
Hypnal, preparation of 362
Hypnotic humbug 563
Hypnotics, new 165, 175
Hypnotism, the triumph of 429
Hypodermatic aperient wanted 181
  solutions, sterilization of 135
  tube, a new 119

I.

Ice, London—examination of 409
Immunization, experiments in 550
Imperial Institute, British 255
Imports of drugs at New York 32, 81, 126, 170, 222, 265, 318, 376, 417
Impurities and mistakes 26
India, indigenous drugs of 274
Industrial development and abstruse science 437
Inebriety, *see* Dipsomania.
Influenza, benzene in 550
Insanity from Indian hemp 455
Insect-bites, a lotion for 163
Insects injurious to drugs 328
  —study of 168
Insoluble salts, so-called—solubility of 517
International Pharmaceutical Congress 215
——— Resolutions of the 470
Iodine and lead, a new compound of 135
  collodion as a depilatory 326
  —commercial tincture of, examined 447
  trichloride as an ocular antiseptic 87
Iodoform decomposition 326
  odor, how to remove from the hands 359
  —substitutes for 27
Ipecac syrup, permanent 562
Ipecacuanha, chemistry of 382
  de-emetinized 411
  emetine in roots and stems of 371
  in hæmatemesis 503
  quality of 313
  root, deterioration of 212
  wood 276
Ipomein for stone 231
Ipomœin, from Convolvulus panduratus 561

Page
Iron phosphate in syrup, color changes in 308
  preparations becoming dark 452
Isomerism confirmed 550
Italian pharmacy 259

J.

Jatropha macrorhizæ root 203
Javanese plants, properties of some 456
Jerubebin in secret preparation 499
Jokes from the prescription case 325
Jumbul in diabetes 213

K.

Kamala, a false 178
Kansas Legislature and the School of Pharmacy 186
Kobert, Prof. R.—papers by 200, 246, 303
Kola, properties of 563
Kresin, a new antiseptic 179, 209

L.

Label paste, a new 210
  formula for 71
Label varnish, a brilliant—formula for 163
Lactophosphate of calcium, syrup of 307
Lady pharmacists 140
Lanain, composition of 359
Lanolin, legal protection of 314
Larvæ, protection of plants against 232
Laxative pills, Parrish's—formula for 24
Leeches, how to keep 209
Letters from Dorpat 246, 303
Levy, Adolph—paper by 109
Light, action of on pills 138
Lily of the valley 134
Limes and lime-trees in the Leeward Islands 36
Lime-water, apparatus for dispensing 131
Linden-seed oil for table use 564
Liniment, Cook's Electro-Magnetic—formula for 24
Linseed oil adulterated with darnel 375
Liquid soap, formula for 163
Lobelia tincture, alcohol in 211
Lockwood, V. H.—paper by 61
London letter 25, 74, 120, 163, 211, 255, 312, 371, 409, 454, 502, 549
Lupulin, spontaneous ignition of 563
Lupus, thiosinamine in 27
Lysol, an ideal soluble disinfectant 87

M.

McGuire, Geo. F.—paper by 109
Magnesium light, a cheap apparatus for 181
Maisch, John M.—estimate of 459
  medal to 363, 365, 371
  sketch and portrait 385
Malakin, a new antipyretic 562
Male-fern extract, activity of 28
  —impurities of 87
  —what is the active principle of? 213
Mangroves in Sierra Leone 324
Manna collection in Sicily 570
Manning, John H.—paper by 403
Manufacturer in pharmacy 530
Matches, the danger from 291, 334
Maté (Ilex paraguayensis), constituents of 564
Meat, spoiled—to detect 383
Meddler, An Officious 487
Melting-point of cocaine salts 446, 541
  of inorganic salts 552
Menthol and cocaine for toothache 210

Page

Metric system in prescription-writing, aids to the adoption of the... 147
weights and measures...... ... 562
Microscope, care of.................. 325
the, in pharmacy........ 275
Milk, decalcified, for infants.......... 372
Millionaire to doctor.................... 231
Mind, the physical power of......... 424
Missouri Pharmaceutical Association, meeting of...................... 317
Mock-turtle broth, formula for....... 162
Molecular weight in figures.......... 568
Morphia, the dose of............503, 551
Morphine and ptomaine reactions.... 330
—solution of bimeconate of. 62
Mouth-wash, Eau de Botot—formula for............ 24
eucalyptus—formula for 210
formula for............ 71
menthol—formula for... 118
Muira puama, Kleesattel on.......... 174
Mutual benefit society of drug clerks.. 237
Myrrh in diphtheria.................. 364
Myrtilli, preparations of............ 427

N.

Nagelvoort, J. B.—paper by........ 405
Naphthalin, perfumed—formula for... 162
National Wholesale Druggists' Association..................... 150
———Convention, comments on..511, 561
———Nineteenth annual convention of 389
———President, the next......... ... 425
———Proceedings of 1893 session.... 433
———The nineteenth annual meeting of—a retrospect............ 486
New alkaloid from coffee............ 456
alkaloids....................276, 283
of opium............ 182
New anæsthetic..................... 87
analgesics......... 27
anodyne and diuretic........... 276
antipyretics.................. 276
antiseptic.............166, 179, 209
blowpipe arrangement......... 559
cardiac remedy............... 181
compound of iodine and lead.... 135
cork-tying device.............. 232
derivative of antipyrin.......... 179
digestive ferment............ 134
diuretic....................... 276
from caffeine........... 456
New form of wood-tar............... 166
galactagogue................... 499
hypnotics.......... ..165, 175, 257
hypodermatic tube.............. 119
kind of protection bottle........ 61
label-paste.................... 210
laboratory for Albion College... 431
machine for cutting and grinding rock................ 328
method for obtaining oxygen from air.................. 515
multiple staining fluid.......... 277
names for old medicines......... 257
narcotic...................... 179
physiological styptic.......... 121
pill-excipient.................. 233
poison-cabinet............. 44
quicksilver mine............... 517
reaction of grape sugar......... 42
remedies, chemical synonyms for 494, 561
salve-base.................... 87
series of coloring matters....... 326
soluble ferment............... 233
sulphur compound............. 87
New suppository-mould............. 137
synthetic antiseptic............ 166
astringent............ 412
compounds.......... 421
New tæniafuge....... 73
test-tube...................... 134
use for carbon bisulphide....... 277
water-filter (bacteriological)..... 234
weevil-destroyer.............. 277
York College, new building for the.................. 233
letter.30, 77, 123, 167, 214, 258, 315, 375, 413, 457, 552
Society of Apothecaries... 90
Nickerson, F. H.—paper by......... 447
Nitrogenous constituents of peptone, estimation of...... 234
"Non-secret" traffic, the...........2, 531
Nostrums, how Germany deals with.. 568
Notes and News....43, 89, 139, 184, 235, 331, 383, 429, 468, 516, 567
"Novelties," some American........ 278
Nut-cracking...23, 71, 117, 162, 209, 295, 309, 359, 408, 451, 499, 548

O.

Oils and fats (pharmaceutical) from animals..................296, 344
—medicinal and essential. 204
Olive oil, adulterated....... 226
detection of sesame oil in... 515
German substitutes for...... 564
Ophthalmia of hop-pickers........... 256
Opium alkaloids, new................ 182
—British trade in...... 164
—Indian *vs.* Turkish......... 313
—the trade in............ 64
Organic chemistry, position of in the domain of science......... 17
extracts—a boom in the preparation of...... 314
a new fad......... 294
Organic materia medica of the U.S.P. 1890......................... 496
Ouabaio: Wabel or Wabajo arrow-poison.......................... 269
Oxygen from air, new method for obtaining.................. 515
—Scheele's designation of.... 359
Ozone, speculations concerning....... 373

P.

Pan-American Congress excursion to Rome......................... 296
Pan-American Medical Congress..217, 243
———Committees.................. 341
———Permanent organization of..... 261
———Section announcement...... ... 317
Papaw tree, the..................... 179
Paper stockings..................... 429
Paracoto oil....................... 41
Paracresotic acid, therapeutics of..... 135
Paraffin in ear disease............... 331
Paraphenol carbamide, reactions of... 326
Paregoric, French revival of....... . 73
Paris letter.................119, 164, 311
Pasteur birthday celebrations........ 44
Pastilles, chocolate................. 165
Patent medicines and the drug trade.. 370
and the World's Fair 139
containing poison... 25
—decline in the sale of.............. 454
— ethical — analysis of some.......... 489
Pavements of wood—are they unwholesome?...................... 314
Peanut meal as a food.............. 122
Pepsin, "black"..................... 231
Dr. Friedländer on.......... 174
estimation of............... 166
testing—an open letter...461, 505
war, pork-packers'.... 229
Pepsins, comparison of. 307
Peptone, commercial — estimation of the nitrogenous constituents of..... 234
Percolation, economic............... 100
Percolator, Peerless................ 360
Perfume in orchids.................. 231
Peroxide sodium................... 500
Peru balsam in tuberculosis.......... 166
—methods of collecting.. 570
Peruvian pharmacy and the drug business........................... 273
Pettenkofer, Prof.—impressions of... 415
Pharmaceutical education, further advance in......... 378
"hash" objected to in Berlin..... 314
humor, German..... 379
journals............ 567
Pharmacist, the incomplete.......... 421
Pharmacists—where they come from.. 187
Pharmacology, position of........... 256
the development of... 549
Pharmacopœia for Denmark.......... 231
—the new (1890)....... 361, 387, 482
—the new—organic materia medica of...... 496
—the new U. S.—reception of in England... 454
—the new (1890)—select tables from......... 569
—students and the.401, 402
—supplement to the French............ 43
Pharmacy, American—an English view of......... 380
a, nearly five centuries old. 43
as a profession............ 568
Board, Michigan — new rules of............534, 571
changes in............... 530
in France................ 568
in the clouds............. 232
laws........... 184, 332, 437
—a wrong righted... 232
—benefits of......403, 488
—proposed........... 345
Pharmacy, new methods in.......... 530
the largest in the world..... 560
Pheduretin, a new anodyne and diuretic.............................. 276
Phenol-phthalein solution........... 253
Phenosalyl, formula of............. 118
Phloridzin, action of................ 213
Phosphates, liquid acid—formulas for. 254
Phosphorus poisoning and the blood.. 76
Photography, detective.............. 562
Physiological action of chemical substances.......................... 328
Physostigmine, rubro-eserin from.... 123
Pichi as a diuretic................. 28
—therapeutics of............. 374
Picrotoxin, action of................ 374
Pil. dipsomania (Dr. Mann).......... 381
Pill coating........................ 332
excipient, a new.............. 233
animal charcoal as a... 327
for general use. 109
Pills, effect of light on.............. 138
Pilocarpine, graduated injections of,.. 503
therapeutic uses of...... 455
Pinaud's Eau de Quinine, formula of.. 162

Page

- Piperine 456
- Pitcher-plants and frankincense 67
- Pittsburgh druggists 220
- Pixol, a new form of wood-tar 166
- Plant, an anti-malarial 135
- Plant-nutrition, eccentricities of 211
- Platt's chlorides, formula of 209
- Podwyssotzki, Valerian—sketch and portrait 49
- Poison cabinet, a new 44
  - perfected 563
- Poisoning by Primula obconica 373
  - by tartrated solution of sublimate 500
  - of the future 335
- Poisons, an open letter on the sale of 553
  - antidotes for 278
- Poisonous plants 253
  - and their poisons 542
- Poisonous sardines 26
- Popular synonyms, dangers of 212
- Pork-packers' pepsin war 229
- Potassium iodide ointment, base for 41
  - permanganate as an antidote to organic poisons 326
- Potato blight, specific for (Bouillie Bordelaise) 41
- Practical hints, one thousand 5
  - observations 407
- Prescriptions, a uniform price-scale for 483, 514
  - cross-checking 310
- Preserving eggs, process for 408
- Prizes for window designs 232
  - to French pharmacists 119
- Proprietary medicines containing poison, who may sell 121
- Prussic acid from sugar 565
- Pseudohyoscyamine, a new alkaloid 276
- Purgative for children, formula for 117
- Purification of fixed oils 562
- Pyrozon for skin affections 87

Q.

- Quicksilver mine, a new 517
- Quinine chlorhydro-sulphate, chemistry of 42
- ———Physiological action of 134
- Quinine in India, output of 517

R.

- Radam, the microbe-killer, assessed $6,000 187
  - *vs.* Eccles 290
- Rat-paste without phosphorus, formula for 71
- "Reactions," English reception of 550
- Reagent for alkalies, Schweissinger's 453
- Remsen, Ira—sketch and portrait 289
- Resorcinol 73, 87
- Respiration, the wonders of 178
- Rest, how to 429
- Retrospect of German pharmacy for 1892 26
- Rhus radicans in urine-incontinence 76
- Rock and mineral, to grind thin sections of 328
- Romance of Arthur Robottom 455
- Rose-growing and pressing in Saxony 420
- Rubidium iodide, advantages of 565
- RUSBY, H. H.—papers by 20, 350
  - a chat with 465
- Russian pharmacists scarce 185

S.

- Saccharin 85
- Salacetol, a new synthetic, in diarrhœa 412
- Salicylic and boric acids as a germicide 209
- Salocoll, a new antipyretic 276
- Salol collodion for rheumatism, formula for 117
- Salophen as an antirheumatic 88
- Salves, technique and prescription of 427
- Sandalwood oil, specific gravity of 411
  - test for ...
- Sardines, poisonous 26
- Sarsaparilla, action of mercury in 28
- SAYRE, L. E.—papers by 401, 445
- Scheele, Carl Wilhelm—sketch 52
  - memorial medal 89
- Schmidt, Ernst—sketch and portrait 193
- SCHUBERT, E. A.—paper by 17
- Science, the progress of 485
  - *vs.* humbug 290
- Scopolamine, mydriatic action of 412
  - relation of to hyoscine 257
- Sea-weed, medicinal and economic uses of 159
- Sea-weeds 183
- Section-staining, formulas for 120
- Selenium, properties of 548
- Sesame oil in olive oil, detection of 515
- Shake mixture, the 233
- Shampoo cream, egg—formula for 71
- Shaving-cream, formula for 162
- SHEPPARD, S. A. D.—paper by 488
- Shoes, tan-colored—two dressings for 210
- Silver work of dispensing apparatus 198
- SIMMONDS, P. L.—papers by 64, 110, 159, 204, 296, 344, 448
- SIMON, WM.—paper by 402
- Siphon, a practical 500
- Snake-bite, symptoms attending 373
- SNOW, H. W.—paper by 489
- Soda-fountain apparatus, receiving and unpacking 152
  - linings, collapse of 103
- Soda-water dispensing apparatus, the silver work of 198
- ———The various styles of 244
- Soda-water, foam for 209
  - marble-dust for 341
  - sulphuric acid for 396, 439
  - the making of 12
  - the pungency of 299
- Sodium bicarbonate, increase of the use of 165
  - peroxide as a bleach 87
- Solution arsenate of soda, formula for 254
  - of albuminate of iron—Dieterich's formula 118
- Somnal 41
- Soot in stovepipes, zinc for 180
- Sozodont, formula for 24
- Specific gravity, relation of to atomic weight 495
- Spectrum analysis 467
  - —foundation of by Bunsen and Kirchhoff 559
- Spiritus ætheris nitrosi, a method for preserving 328
- Spontaneous ignition of lupulin 563
- Spray for the sick-room, formula for 118
- Spring medicines 214
- Staining fluid, multiple—a new 277
- Standardization, Farr and Wright on 411
- Sterilization of hypodermatic solutions 135
- Sting of insects, to prevent 325
- Stomach-drops (German), formula for 118
- Strong, Samuel M 481
- Strontium salts 27
- Strophanthus seeds, commercial 255
  - tincture, test for 254
- Strychnine detection 325
- Strychnine determination 405
  - in the cadaver 26
- Student life in Europe, four years of 218
- Styptic, a new physiological 121
- Sublimate dressing, acid 109
- Sublimed sulphur in diphtheria 550
- Substitution 243, 399
  - —a case of the evil results of 570
  - (Where are We At?) 262
- Sugar of milk, common and recrystallized 515
  - —prussic acid from 565
  - sweetened by salt 569
- Sulpho-salicylic acid as a urine albumen test 109
- Sumach of commerce 229
- Superstition in medicine 502
- Suppository-mould, a new 137
- SUTTIE, Dr. G.—paper by 496
- Sweating hands and feet, formula for treatment of 118
- SCHWICKERATH, Dr. KARL—paper by 535
- Symphorol, nomenclature of 552
- Synthetic compounds, the latest 121
  - fragrance 552
  - guaiacol, how to make 254
- Syrup of ipecac, permanent 562

T.

- Tabloids, insoluble 116
- Tact in salesmanship 185
- Tæniafuge, new 73
- Tariff bill, a 228
  - rulings 197
- Tartaric acid and corrosive sublimate, toxicity of 500
- Tea, danger from packing in lead 550
  - how to make 372
- Teeth of children, preserve the 180
- Testing, pharmaceutical—a short course in 445
- Test-tube, a new 134
- Test-tubes, improvement in 515
- Teucrin in mycotic diseases 122
- Theine and caffeine identical 38
- Therapeutic notes of interest to pharmacists 15, 59, 107, 154, 302
- Thermometers, recent improvement in 564
- Thiodinaphthyloxide, a new sulphur compound 87
- Thiuret, a new synthetic antiseptic 166
- THOMPSON, F. A.—paper by 305
- Thymacetin in neuralgia 88
  - —physiological action of 161
- Thymus serpyllum, Lin 548
- Thyroid extract 135
  - juice, preparation and use of 180
  - —preparation of 412
- Tinctures, Farr and Wright on 211
  - doubtful economy in making 533
  - from fluid extracts 441, 533
  - variation in the standards of 563
- Toad, the poison and therapeutics of 502
- Tobacco, fermentation and the flavor of 567
- Toilet vinegar, formula for 118
- Tolypyrin 88
- Tolysal 88
  - in articular rheumatism 179
- Toothache drops, formula for 23
- Tooth-paste, antiseptic—formula for 72
  - charcoal—formula for 72
  - Cherry—formula of 210
  - formulas for 23, 453

Page
Toxic constituents of Jatropha Curcas and Croton Tiglium 200
Toxicity of chemical elements, geological classification of 315
Trademark extortion and fraud 395
Trade Supplement ..45, 91, 141, 189, 237, 286, 335, 384, 432, 471, 518, 571
Treatment by drugs 208
"Triocanthine" 119
Tropacocaine? 176
Trusts, laws against 197
Tschirch, W. O. A.—sketch and portrait 337
Tye, Dr. R. L.—paper by 441
Typhoid fever, Ehrlich's urine-test for. 37

U.

Ultramarine, composition of 408
Uniformity of pharmaceutical preparations 428
Upham, N. A.—paper by 109
Upson, Dr. **Rosa**—paper by 491
Urine-test for typhoid fever—value of.. 37

V.

Vaccine purification 119
Vanilla, artificial extract of—formula for 24
Page
Varnish by electricity 517
"Vaselin"—what does it signify? 164
Vegetarian pedestrians, successful 569
Veterinary jealousy 74
Vin Arny, Harry—paper by 100
Vinegar, definition of 313
Violet odor synthetically 552
Vitriolic air, or "fire air"—oxygen ... 359
Vogl, August Emil—sketch and portrait 97
Volumetric analysis, Bunsen's contribution to 558
  of oil of wintergreen 61
Volumertic determination of the alkaloids 38
Volunteer's Garland, formula for 24
Von Mueller, Baron Sir Ferdinand—sketch and portrait 241

W.

Wager, an interesting 44
Warwick, Thomas—papers by....12, 57, 103, 152, 198, 244, 299, 341, 396, 439
Water, chemical purification of...276, 568
  sterilized and filtered.... 128, 234
  —in the fifteenth century 165
Water-chestnut, the Indian 322
Water-filter, a bacteriological 234
Page
Wearn, W. H.—paper by 308
Weather glass, or chemical barometer 408
Weed-killer, how to make a 254
Weevil-destroyer, a novel 277
Weller, Charles F 529
West Indies, drugs from 236
What druggists cannot take back 91
Whelpley, H. M.—papers by..15, 59, 107, 154, 302
Whiskey trust and its latest scheme... 4
  —down with it 80
  entombed 55
Wilcox, R. W.—paper by 354
Willoughby lake and mountain flora.. 20
Winchester pint 452
Windows, how to clean 210
Wine of cod-liver oil—what is it? 533
Wintergreen, oil of—volumetric analysis of 61
Witt, Otto N.—papers by 157, 348
World's Fair hospital record 567

X.

Xanthaline, a new opium alkaloid 182

Z.

Zero point, origin of 549
Zinc oxide, toxicity of 74

John Attfield.

At the age of 57.

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INDEX OF CONTENTS.

Editorial. PAGE

Professor John Attfield, F.R.S. 1
The "Non-Secret" Traffic 2
The Whiskey Trust and Its Latest Scheme 4

Original Articles.

PRACTICAL PHARMACY.

One Thousand Practical Hints for Dispensing Pharmacists. By Leon C. Fink 5
Making Soda-water. By Thomas Warwick 12
Therapeutic Notes of Interest to Pharmacists. By H. M. Whelpley, Ph.G., M.D 15

CHEMISTRY.

The Position of Organic Chemistry in the Domain of Science. By E. A. Schubert, B.S., Ph.G 17

BOTANY AND MATERIA MEDICA.

The Willoughby Lake and Mountain Flora. By H. H. Rusby, M.D... 20
The Hairs of the Chœtophoraceæ 23
Nut Cracking 23

Correspondence.

London Letter 25
Berlin Letter 26
New South Wales 28
New York Letter 30
Chicago Letter 31
Imports of Drugs, etc., at the Port of New York, for the Month of December, 1892 32
Cure for Chilblains 33
Facetiæ 34
Abstracts and Translations 36
Pharmaceutical Progress 41
Notes and News 43
Trade Supplement 45

PROFESSOR JOHN ATTFIELD, F.R.S.*

Professor John Attfield, M.A. and Ph.D. of the University of Tübingen, F.R.S., Professor of Practical Chemistry to the Pharmaceutical Society of Great Britain, was born near Barnet, Hertfordshire, England, on Aug. 28, 1835. His first taste for science was given by the physical and chemical lectures of his schoolmaster, the Rev. Alex. Stewart, at Barnet. In 1850 he was articled to Mr. W. F. Smith, manufacturing pharmaceutical chemist, London. In 1853-4 he was a student in the Pharmaceutical Society's School, and First Prize-man in all subjects—chemistry, botany, pharmacy, and materia medica. From 1854 to 1862 he was Demonstrator of Chemistry at St. Bartholomew's Hospital, London, and lecture-assistant and research-assistant to the professors of chemistry there, Dr. Stenhouse, F.R.S., and, afterwards, Dr. Frankland, F.R.S., not only at the hospital, but also at the Addiscombe Military College, and at the Royal Institution. During the same period he wrote most of the chemical articles in "Brande's Dictionary of Art, Science, and Literature," and in the Arts and Sciences Division of the "English Cyclopædia," besides being a frequent scientific contributor to several journals and newspapers. In 1862 he took his University degrees, his thesis being an account of an original research "On the Spectrum of Carbon," a paper read before the Royal Society and published in the "Philosophical Transactions." In the same year he was appointed to the chair of Practical Chemistry in the Pharmaceutical Society's School, where he is now (1892) senior professor and dean. He is a Fellow, and was for several years on the Council, of the Chemical Society; is a Fellow, was one of the founders, and was for several years on the Council, of the Institute of Chemistry of Great Britain and Ireland; is a Life Member, and on the General Committee, of the British Association for the Advancement of Science; is a Fellow of the Society of Chemical Industry; was for two years President of the Hertfordshire Natural History Society; was one of the five founders, for seventeen years Senior Secretary, and for two years President, of the British Pharmaceutical Conference, an organization for the encouragement of original research in pharmacy, each of his presidential addresses "On the Relations of Pharmacy and the State" drawing supporting leading articles from the *Times* and other chief newspapers; the members, on his retirement, presenting him with an illuminated vellum and five hundred specially bound volumes of general literature. He was Secretary of the Food Jury at the International Health Exhibition. He also wrote the Exhibition Handbook on "Water and Water Supplies," which has reached a third edition. He has written largely on pharmaceutical education, and the relation of education to examination, his views, especially as regards compulsory public curricula, having gradually won the support of all leading pharmacists. The present chemical nomenclature of the Pharmacopœias of Great Britain and the United States was adopted on his recommendation and long advocacy. His great work is "A Manual of Chemistry: General, Medical, and Pharmaceutical," of which there have been published thirteen large editions in twenty-three years, seven being adapted to British and six to American medical and pharmaceutical requirements. For this book he was awarded a gold medal at the Exhibition in Vienna in 1883. He was appointed by the General Council of Medical Education and Registration of the United Kingdom to be one of the three editors of the "British Pharmacopœia of 1885," has since been Annual Reporter on the "Pharmacopœia" to the Council, and has been appointed by the Council editor of an Addendum to the "Pharmacopœia." In the production of the latter he has successfully brought about the recognized co-operation of the two leading British representative bodies of medicine on the one hand and pharmacy on the other; co operation that will, doubtless, be maintained in the compilation of future editions of the great medicine-book of the empire. For this service he has received the thanks both of the Medical Council and of the Pharmaceutical Society. In the Royal Society's Catalogue he appears as author of thirty-seven original scientific papers, mostly of pharmaceutical interest, published in the Transactions of the Royal, Chemical, and Pharmaceutical Societies. His scientific and educational work has gained for him not only the much coveted honor of being a Fellow of the Royal Society, but also the following twenty-one honorary distinctions: Honorary Member of the Pharmaceutical Societies of Great Britain, Paris, St. Petersburg, Austria, Denmark, East Flanders, Australasia, and New South Wales; of the American Pharmaceutical Association; of the Colleges of Pharmacy of Philadelphia, New York, Massachusetts, Chicago, Maryland, and Ontario; and of the Pharmaceutical Associations of New Hampshire, Virginia, Liverpool, Manchester, Georgia, and the Province of Quebec. At the Chicago College the chief lecture theatre is named "Attfield Hall," and his portrait in oil is hung on the College walls "in recognition of his aid in raising the College from its ashes after the great fire of 1871, and of his devotion of the cause of education." Professor Attfield is a chemical analyst and consultant, as well as teacher. He is the Honorary Consulting Chemist and Analyst to the London Orphan Asylum. He resides at "Ashlands," Watford, Hertfordshire, in the southern portion of that rural and beautiful county, and within half an hour's railway ride of London. He is a namesake and probable descendant of the John Attfield who flourished in "the Ville of Staundon" (now Standon), Hertfordshire, in the fourteenth century.

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* By Joseph Ince in "Men and Women of the Time." G. Routledge & Sons, Ld., New York.

THE "NON-SECRET" TRAFFIC.

It has long been patent that the proprietary medicine interest exerts undue and pernicious influence upon pharmacy, and many suggestions looking to relief have been offered, though to little good result, presumably because such are aimed at eradication rather than restriction and amelioration. The fact still remains that time and precedent sanction the trade in "patents," so-called; that it moreover is legitimized and fostered by legal enactment; and last but not least that the chief sufferers, the masses, clamor loudly for its perpetuity. We are thus compelled to recognize "patents" as possessing a certain unassailable status, one that must continue so long as the world endures, or until the Utopian hope is realized of assimilating all ranks and classes on the basis of uniform education, and intellectuality. There is but one measure left, and that to restrict the traffic in a way to best shield its dupes, say by taxation on the basis of assumed (not real) value, whereby may be returned to the public some portion of that of which it is fleeced.

But what shall be said of another and greater evil that at one time assumed a threatening aspect—the trade in "Non-Secrets," that with pseudo-claims to scientific standing, is all the more misleading and insiduous because unamenable to any code of law or morals? This cloud "scarce larger than a man's hand," some years since suddenly appeared upon the pharmaceutical horizon, and black with portent swiftly spread toward the zenith. Fortunately it failed in great measure, and the threatened flood and hurricane resolved itself into a noisy breeze and occasional rattle of hail. Aimed at the very vitals of medical and pharmaceutical progress, it has chiefly exhausted its efforts in the promotion of peripatetic charlatanism and the establishment of street fakirs; yet it continues to steal from the legitimate patent proprietor, and seeks to rob him not alone of the fruits of his investment and industry, but of the very industry itself. And not the least of its sophistical and morally pernicious assumptions is the one that totally controverts the old aphorism that "*Two wrongs* can never constitute *one right.*"

As already remarked, we are compelled to concede the status of the "patent" manufacturer, including his right to name and market his products in consonance with his individual interests. While we deplore the social condition that permits and upholds this evil, and in spite of moral repugnance thereto, candor demands the admission that the harvest legally and legitimately belongs to him who scatters the seed and cultivates the ground, and not to the one who lolls on the fence and then would fain garner the sheaves. The latter is emphatically the position of the manufacturer of "Non-Secrets" who copies as closely as possible, or as nearly as he dares without rendering himself amenable to processes at law, the labels, wrapper-designs, advertisements, therapeutic claims, formulas, etc., of his "patent" rival. What code of honor can attach to this, or what form of morality will sanction! The evils accruing to "patents" are thus many times multiplied. The same morals that uphold "Non-Secrets" would equally justify the trade in forged cupons upon the Louisiana Lottery; the copying of tickets is as legitimate as the imitating of "patent medicines," and "patent labels or advertisements." There is as much extenuation for the one act as for the other, and in both instances the public becomes the chief sufferer since it does not receive the goods it seeks to purchase. That the Lottery and "patent" nostrums are equally pernicious, and alike hold out promises that can be fulfilled in but very few instances, is evident to the most meagre understanding; and equally evident is the fact no possible benefit can obtain to the purchase of imitations save in behalf of the promotors of the fraud. No complaint would be made if "dog ate dog" alone, but unfortunately it is the innocent that in every instance are the real sufferers.

The "Non-Secret" manufacturer is not only guilty of deliberate deceit, but he is doubly despicable in that he preys alike upon the victim of the leech and upon the leech itself; he is a parasite robbing a creature that depends upon parasitism for existence. He suborns his following with promises of extended financial reward, and his schemes are so outlined, and his advertisements so speciously worded, as to delude each pharmacist into the belief he will strengthen his own position by voluntarily becoming one of the tentacles attached to the central body of the octopus, thereby increasing the blood-sucking power of the latter, and placing all trade within the reach of its remorseless and insatiable beak. Like the "Enemy" when he took the Saviour "into a high mountain," the "Non-Secret" tempter pledges to deliver that to which he has not even a shadow of title, but of which he hopes to gain possession through the weakness and forced fealty of the tempted; for he outlines in unmistakable utterances a programme of wholesale pharmaceutical and medical brigandage whereby, at one fell swoop, "legitimate" (save the mark!) profits may be doubled, the patent proprietor robbed, the pharmacist enslaved, the medical man hood-winked, and the "dear public" confidingly duped. With the accession of the "Non-Secret" millennium every druggist would be a petty patent proprietor helplessly at the mercy of a monopoly; the medical profession relegated to oblivion; the ill and afflicted squeezed and bled to the utmost limits of endurance; while the Arch-fiend of the combination in his lair gloatingly contemplated the Judas-treasure—for he voices his hopes in no modest way,—wrested from his dupes, and dupes' dupes—blood-money extorted from poverty and misery, constituting a quadruply damning tax superimposed upon a tax already damnatory!

Again, the "Non-Secret" manufacturer in his attempts to deceive the medical fraternity and entangle it in his meshes, blatantly boasts of the "scientific" (Sic!) character of his preparations, at the same time endeavoring to pose as a *reformer* who is seeking to obviate the "patent" medicine evil—though no one better than himself understands the hypocrisy of these claims, and that but for the very evil which he so sedulously copies and pirates upon, his own degrading heresy could not exist. His preparations are "scientific" because, forsooth, he prints the purported formula on every package; and of course it is all "open," "fair," "honest," "above-board," etc.; yet, strange to say, in spite of all this frankness, many proprietary and "patent" manufacturers do the same, and it is as notorious in one case as in the other, that any attempt to duplicate by the published formula, in many, perhaps a majority, of instances is attended by egregious failure. What guaranty is ever given of the correctness of the formula aside from the unsupported assertion of the manufacturer, who is necessarily swayed by the most selfish and sordid of motives—that of individual gain? He refuses to be measured by any standard but his own, and how high that ranks can readily be imagined, since his schemes "are conceived in dishonesty and born in deceit!" He will hardly strain at a gnat after swallowing the camel, hump, halter, pack-saddle, and all. Only recently we came into possession of one of these purported "Non-Secrets" claiming to derive its virtues from fresh figs, yet the figs had existence only in a "figment of imagination," and no pharmacist need be told such preparation could not be made both active and stable, if at all palatable; and examination revealed its heralded qualities depended solely upon a mixture of senna, rhubarb, and soda.

Are not then the guaranties of the "patent" proprietors equally as valuable as those of the "Non-Secret" dealers; and are not the therapeutic assumptions of the first, equally as just and "scientific," and entitled to as much credit, as those of the latter? Neither proprietor is, as a rule, possessed of any form of medical training; neither has any precise knowledge of the maladies he professes to ameliorate; both rest their claims upon empty verbiage; and the aim of each is abnormal gain at the expense of suffering humanity. Of the two the "patent" manufacturer is the more creditable, since his methods and assumptions are apparent and his warfare with medicine and pharmacy that of the open field; moreover he debauches one class less of society in his endeavor to serve individual interests. On the other hand the "Non-Secret" manufacturer always lies in ambush to catch the unwary, and his offence is that of the guerilla or bandit,—of the poisonous serpent character, unredeemed by a single saving quality. G. A. S.

THE WHISKEY TRUST AND ITS LATEST SCHEME.

That model corporation styling itself "The Western Cattle-Feeders' and Distillers' Association," but otherwise quite properly known as the "Whiskey Trust," is now fathering a scheme which, for audacity, fairly rivals the outrageous methods pursued by that body in ridding itself of competition. We refer to the proposed increase in the tax on spirits. Happily the daily press are taking the subject up, and we hope that our legislators will not listen to the siren's voice, even though it carries with it the sweet influence of an estimated profit to the Trust of something like ninety million dollars.

The *Detroit Free Press* of Dec. 16th treats the matter in the following language:

"The guarded suggestion which the Secretary of the Treasury makes for an increase of the tax on whiskey would have no particular significance but for the fact of a pretty general belief that a move is on foot which has for its object an enormous grab on the part of the whiskey trust, a scheme to which an increase of the tax would directly contribute.

"The plan, so far as it has been disclosed, is to increase the tax on spirits from 90 cents a gallon, as at present, to $1.50; and the argument to be used in support of the increase is the one hinted at by Secretary Foster, that the revenue can be increased some $50,000,000 without any interference with the tariff. The popular support is counted on with considerable confidence because of the impression expected to prevail that the tax will be a fresh burden on the whiskey-producers, whom a great many are always ready and glad to tax to the utmost extent.

"The theory is an excellent one until it is examined. But when examination discloses that the whiskey trust is itself at the bottom of the proposition, there begins to be a doubt whether the whiskey men are really to be burdened by the increased tax. Further examination shows that the increased tax would greatly benefit the whiskey producers by increasing enormously the profits of the trust; and this point having been reached, it is easy to understand why the trust favors what seems at first glance an increase of its burdens. For the past three years there has been going on in the whiskey-producing States a steady over-production of that commodity. The bonded warehouses of Kentucky, Pennsylvania, Maryland, and West Virginia hold to-day an amount of whiskey nearly equal to five times the average annual consumption, and still the over-production is going on. In order to still further increase the stocks on hand, the price has been forced up by the trust with a view to the checking of consumption. In the Kentucky bonded warehouses alone, it is said, the amount of whiskey which will be stored by the earliest date at which an increased tax could take effect will be 90,000,000 gallons; and it is estimated that the total amount in the bonded warehouses of the country under the control of the trust will by that time be not less than 150,000,000 gallons.

"Upon this entire stock, it will readily be understood, not a penny of the increased tax will be paid; but it will all be put on the market at the price which the increased tax enables the trust to charge. In other words, the trust will be enabled, by the increasing of the tax, to raise the price of its whiskey sixty cents a gallon, which means a clear profit on 150,000,000 gallons of $90,000,000. Meanwhile the Government will not get a cent of increased revenue from the increased tax, because the stock on hand and controlled by the trust will be big enough to supply the market for five years or more.

"The bare statement of the sum involved in the scheme shows the danger. About a quarter of a century ago the whiskey ring succeeded in squeezing an enormous profit out of the country through an increase in the whiskey tax. It was urged in favor of the tax then, as it is now, that the revenue of the Government could be increased, but as a matter of fact it was diminished instead. In a single year, from 1867 to 1868, the revenue from the whiskey tax sank from $33,000,000 to $18,000,000, and when the tax was reduced the revenue jumped at once to $45,000,000 in a single year. In that case it was the whiskey ring which urged the reduction of the tax after the purpose it had in view in the increase had been accomplished; and it is most likely that the experience would be repeated in that aspect also if the old experiment is tried at the behest of the trust."

As many of our Representatives at Washington may be deceived into the belief that this proposed increase is going to pour into the treasury of the United States, it behooves pharmacists, as consumers of alcohol, to see that the facts of the case are thoroughly understood; otherwise we shall wake up at some early day to realize that we have been made a "cat's-paw."

PRACTICAL PHARMACY.

ONE THOUSAND PRACTICAL HINTS FOR DISPENSING PHARMACISTS.

BY LEON C. FINK.

(*Continued from Bulletin of Pharmacy, December, 1892.*)

MANUFACTURING DEPARTMENT—CONTINUED.

Medicated syrups and more dilute aqueous solutions of sugar are prone to fermentation. * * * When, therefore, these are manufactured in quantities more than sufficient to supply the average demand for a month or two, some special provision should be made for their preservation.

In the process of fermentation, cane sugar first changes into glucose, then into alcohol and carbonic acid as indicated by the following simple reaction:

$$C_6H_{12}O_6 = (C_2H_5HO)_2 + 2CO_2$$

Glucose—Alcohol+Carbonic acid

If the reaction is not arrested at this point, acetous fermentation begins, with the conversion of the alcohol into acetic acid through oxidation, as follows:

$$C_2H_5HO + O_2 = C_2H_4O_2 + H_2O$$

Alcohol+Oxygen—Acetic acid+Water

Alcohol is the most important derivative of sugar through fermentation, and is usually obtained from whiskey by distillation. * * * The ardent spirits of commerce are generally distilled products from vinous liquors: *Brandy* from wine; *rum* from fermented molasses; *whiskey* from grain; *gin* is rectified from juniper berries.

It is usually the purpose of the pharmacist to prevent, rather than to facilitate, fermentative change. * * * Fermentation in syrups is readily recognized by the development of a vinous odor and the frothy appearance imparted to the liquid by the elimination of carbonic acid gas. * * * The practice of restoring syrups which have shown signs of fermentation is a reprehensible one. Every pharmacist should possess sufficient moral courage to pour such stuff down the sewer instead of dealing it out to some sick person whose life may be at stake.

Heating syrup to the boiling-point, and then dividing into small bottles which are filled and securely corked while the syrup is hot, is a precautionary measure frequently used with success. * * * It is well to bear in mind, however, that, in addition to any injury the medicinal ingredients may suffer from exposure to a severely high temperature, sugar in acidulated aqueous solutions is gradually converted into glucose by prolonged heating. * * * Glucose is less sweet than cane sugar. It is also less soluble in water, and in aqueous solution is capable of undergoing vinous fermentation without passing through any intermediate state, as has been shown above. * * * Concentration without supersaturation is also a condition favorable to preservation; dense solutions of sugar being less prone to fermentation than dilute solutions.

The stock supply of simple syrup should not be kept in an oak barrel or keg. * * * The porous nature of the wood is especially favorable to fermentation, which may originate in the bulk-container and subsequently develop in medicated syrups made from it. * * * Simple syrup should be kept in glass or earthenware vessels—or it is still safer to use the proper proportions of sugar and water for each operation instead.

That low and high temperatures are safeguards against fermentation is shown by the following facts: * * * At 32° F. fermentation is arrested. From 32° F. to 68° F. it gradually increases in intensity with the rise of temperature. From 68° to 104° F. it is most active. Finally, at about 120° F. it is again checked, and further action is prevented by raising and maintaining a higher temperature.

It is interesting to note that alcohol is one of our most efficient agents for preventing fermentation, although it is itself a product of that very decomposition. * * * The presence of 20 per cent. of alcohol in sugar solutions may be considered proof against fermentation, although 10 or 15 per cent. may answer in some cases. * * * It should be remembered, however, that the addition of an excessive amount to medicated syrups may cause a portion of the sugar to crystallize out.

In preparations where, for pecuniary or other reasons, the use of alcohol is prohibited, salicylic acid will be found one of the most universally efficient antiseptics at our command. * * * In a large practice, the presence of one-half grain of free salicylic acid in each ounce of ordinary sugar solutions has invariably proven an absolute safeguard against vinous fermentation or fungous growth. * * * Benzoic acid is an efficient preservative which is perhaps less amenable to criticism than salicylic acid.

An experiment made with a view of determining exactly what proportion of salicylic acid is necessary to prevent growth of fungus in dilute aqueous solutions of sugar, yielded definite results which may be appropriately mentioned here. * * * Two sets of samples, comparing the behavior of cane sugar and glucose in weak solution, differed only in that the glucose yielded a somewhat heavier growth in samples one, two, and three, than did the cane sugar. * * * The appearance of the samples after standing one year, with grooved corks admitting free access of warm air to the liquid, is plainly shown in Fig. 145, Nos. 1, 2, 3, and 4. * * * Sample No. 1 shows a heavy growth of fungus in a plain (1 to 3) solution of sugar. * * * Sample No. 2 represents a similar solution containing one-eighth of a grain of salicylic acid in each ounce. It will be observed that this quantity is insufficient, the growth being nearly as dense as that in sample No. 1. * * * Sample No. 3, containing one-fourth of a grain of salicylic acid in each ounce of the same solutions, indicate that this proportion is capable of mitigating but not preventing the growth. * * * Sample No. 4 shows beyond doubt that the presence of one-half grain of salicylic acid in each ounce of such solutions is an absolute safeguard against the formation of fungus; the liquid having remained perfectly sweet and transparent after exposure for one year.

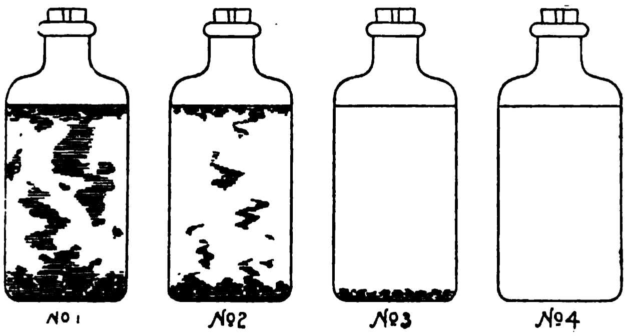

FIG. 145.

Glycerin is not a certain safeguard against fermentation in syrups, nor does its presence, unless in very large proportion, prevent fungus growth. * * * The value of boric acid for preventing fermentation in sugar solutions has been greatly overestimated; its efficiency for this purpose being really quite limited.

The presence of either an excess of strong mineral acid or a slight excess of free alkali, of certain salts such as sulphites and sodium chloride, and of certain volatile oils such as turpentine and creasote, is credited with retarding if not preventing fermentation. * * * These substances are not, however, considered capable of stopping it after the process has commenced.

Commercial granulated sugar often contains an objectionable quantity of ultramarine or other blue, added with a view of masking the natural yellowish tint of the sugar. When the sugar is dissolved, this insoluble blue is deposited, forming a distinctly visible layer upon the bottom of the container.

It is often convenient to know the volume occupied by sugar when dissolved in water, in the preparation of medicinal syrups, etc. * * * A series of carefully conducted experiments indicate that when 1000 grammes of sugar are dissolved in 1000 c. c. of water, the volume is increased to 1630 c. c., indicating that the volume of sugar when dissolved in water amounts to 63 per cent. of the weight employed. * * * From this we must not infer that 100 pounds of sugar will increase the volume of liquid 63 pints, since avoirdupois pounds and wine pints are not commensurate.

The use of saccharin in place of sugar is warranted in some cases, but that it is not a perfect substitute for sugar was plainly shown in an experiment made some time ago, when our cat, which has been the subject of many physiological experiments and seems to possess unusually sound judgment, lapped with avidity a sample of milk sweetened with sugar, but refused a similar sample rendered equally sweet with saccharin. * * * Repeated attempts to confuse the creature, by rapidly changing the vessels, failed, as she would distinguish and reject the saccharin solution with unerring certainty.

Granluar effervescent salts are easily made by mixing the medicament in the form of a perfectly dry powder with an effervescent base mixture of citric acid, tartaric acid, sodium bicarbonate, and sugar, and moistening the mixture with strong alcohol. The pasty mass is then passed through a coarse sieve (No. 8 if coarse, and No. 20 if fine, granules are desired); the granules are quickly dried in a circulation of hot air, and transferred to hermetically-sealed bottles.

The quantity of water employed in administering a dose of granular effervescent salt exerts a marked influence on the effervescence. * * * A teaspoonful of the salt weighs about thirty grains, and contains not more than eight grains, or one-half pint, of carbonic acid gas. Water is capable of dissolving, at the ordinary temperature, its own volume of CO_2, and it is obvious that if one-half pint of cold water is employed in administering such a dose a large proportion of the gas will be dissolved, and but little will pass off, causing feeble effervescence. If the quantity of water be reduced to four ounces, a marked improvement will be noticed, and still more if the quantity be reduced to two ounces. * * * With this in mind, the operator can regulate the behavior of the preparations, to suit the occasion. If he wishes brisk effervescence, a small volume of water should be used; but by employing a larger volume, more gas will probably be conveyed into the stomach, to be liberated with rise of temperature.

Pure white Castile soap, prepared from olive oil and soda, is the official medicinal soap of the U. S. Pharmacopœia. * * * Mottled Castile is a similar soap artificially colored by addition of ferrous sulphate. Originally the colored portion is blue-black, but exposure to air gradually changes it to red. Hence, as the soap grows older the dark interior core becomes smaller, until finally in disappears altogether. * * * There is a steady demand in drug stores for both white and mottled Castile soap, which is usually purchased in bars and cut into small cakes by the pharmacist. When fresh the soap is usually quite soft and can be readily cut with a thin, rigid spatula, but after becoming drier it grows brittle and must be severed with a saw. * * * Fig. 146 shows a convenient device for cutting brittle soap, which can be purchased in the open market, or a substitute for it can be improvised by the druggist. * * * The "sawdust" and chippings from Castile soap can be reserved, to be employed in the manufacture of soap liniment and similar preparations.

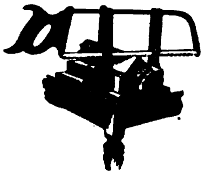

FIG. 146.

The advantage to be gained by employing a glass guiding-rod in pouring liquids from vessels having straight sides and rim without lip is illustrated in Figs. 147 and 148. * * * Greasing the rim and outside surface just below the rim will also prevent the liquid from clinging to the glass vessel and cause it to flow in a full, round stream.

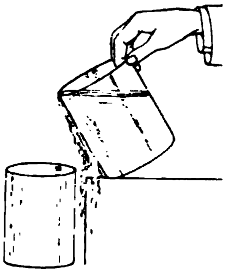

FIG. 147.

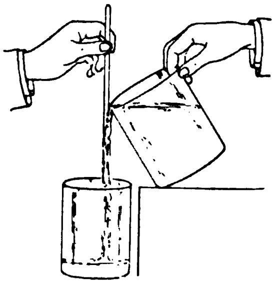

FIG. 148.

Exhaustive research has been made with the hope of discovering some salt of bismuth which could be held in permanent solution in the presence of free acids, but as yet nothing has been found to possess sufficient advantage over the soluble ammoniated citrate to supersede it in practical use. * * * Citrate of bismuth and ammonium requires for permanent solution a neutral liquid; the presence of a very small quantity of free acid being sufficient to decompose this double salt, and precipitate the bismuth, usually in the form of a citrate. * * * In view of this, bismuth elixirs and solutions should not be combined in a haphazard way in prescriptions, for the bismuth will usually be deposited soon after neutrality is disturbed by the addition of liquids or substances having an acid reaction. * * * As a rule, with some exceptions, precipitates of this nature can be redissolved by neutralizing the liquid with a few drops of ammonia-water.

Neutralization of liquids is best effected with the aid of litmus test-papers, prepared by dipping strips of thin white filter-paper in a solution of litmus and drying them in an atmosphere free from acid or ammoniacal fumes. * * * Ready-made neutral litmus paper can be purchased if desirable, and every pharmacist who is not familiar with its practical use should perform the following experiment: * * * Place before you three small graduates or beakers, each containing four ounces of water. To the water in the vessel on the left of the centre add three drops of hydrochloric acid, to that on the right add two drops of stronger water of ammonia, and stir both thoroughly. * * * Partly immerse a strip of litmus paper into each of the three liquids, holding it there until thoroughly saturated; then lay the three strips side by side upon a sheet of white paper. * * * It will be observed that the paper dipped in the *acid liquid* is turned *red*, and that dipped into the *alkaline liquid* is turned *blue*, while that saturated with *neutral* water is not changed more than would naturally result from moistening it. * * * If now the alkaline and acid liquids are thoroughly mixed, a strip of litmus paper immersed into the liquid will probably show a *neutral* reaction, like that of the water in the middle vessel. * * * The delicacy of this test will be shown by the fact that all the moistened test-papers soon turn blue, indicating the presence of a slight trace of free ammonia in the atmosphere in which the ammonia bottle was opened while executing the experiment.

In testing solutions after neutralizing acids with carbonates, inexperienced operators are often misled by the presence of dissolved free carbonic acid which turns the litmus paper red, although the solution proper may be quite neutral. * * * By stirring the liquid thoroughly and heating a portion to expel the carbonic acid gas, a true indication of the reaction can be obtained.

Do not attempt to neutralize liquids in bottles or demijohns, particularly when the containers are nearly full. * * * It is safer to pour the preparation into an open graduate or crock, where it can be freely stirred, examined, and tested.

Ordinary cheap butter-crocks, having a capacity of five, ten, or twenty gallons, and fitted with earthen covers, are convenient for general laboratory use. * * * There is always danger of imperfect mixture in stirring heavy and light liquids together with an ordinary stick. This can be illustrated by placing a small quantity of glycerin in a graduate and undertaking to stir an equal volume of water into it with a glass rod. * * * In stirring any considerable volume of liquid a broad-bladed paddle, shown in Fig. 149, should be employed.

The broad surface of the paddle-blade sets every portion of the fluid in commotion and insures thorough mixture, while, on the contrary, a thin slender rod cuts its way through the liquid, which is otherwise slightly perturbed.

When a carbonate is to be added to an acid liquid, as in the preparation of solution of magnesium citrate, be sure to employ a vessel large enough to allow for effervescence, thus avoiding loss of material and annoyance from overflow. * * * In breaking up large lumps of alum, ice, etc., wrap the substance in a piece of cloth before striking with the hammer, to prevent fragments from flying about.

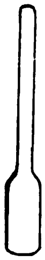
Fig. 149.

A case of shelving or a closet, preferably with glass doors, should be reserved in the laboratory for storage of expensive and fragile chemical apparatus, such as beakers, retorts, chemical flasks, condensers, porcelain capsules, hydrometers, thermometers, etc. * * * Aside from the tidy appearance, such a closet will soon be paid for in preventing loss by breakage.

It frequently happens that cracked bottles are rejected when, with the application of a little skill, they could be made useful in many ways. Suppose, for example, that bottle *B*, Fig. 150, is cracked as per *C*, and the crack extends to the point *E*. * * * With a piece of cardboard or string tied around the bottle as a guide, trace an ink-line (*LL*). Draw a piece of glass tube (*T*) to a point (*P*); insert it into a rubber tube (*R*) connected with a gas jet. Light the gas and adjust pressure so that a slender flame (*F*) is obtained, as shown in Fig. 151. Apply the flame at *E*, and recede slowly. The crack will follow the flame, and with a steady hand and the exercise of a little patience the cut can be made to divide the ink line in twain its entire length. The sharp edges of the resulting jar can be obtunded with a file.

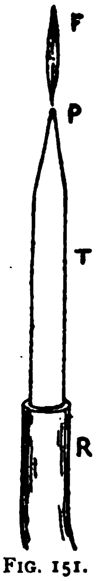

FIG. 151.

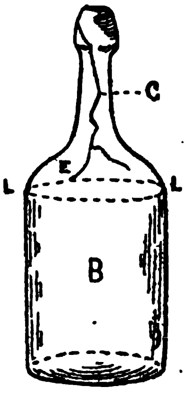

FIG. 150.

Another, and altogether a more practicable, method for cutting glass, by which imperfect bottles can be converted into precipitating-jars, is illustrated in Figs. 152 and 153, and described as follows: * * * Take an ordinary gallon bottle, and tie around its body just below the shoulder a double *strand* of candle-wicking; then thoroughly saturate the ring of wick with alcohol by carefully pouring upon it a thin stream from the lip of a small graduate. Ignite the alcohol, and hold the bottle in position shown in Fig. 152, so that the glass above the string will be heated more than that below. When the alcohol is nearly burned out, carefully let fall upon the wick only a few drops of cold water. * * * This method, if executed with ordinary care and promptness, will usually sever the neck and shoulders from the body of the bottle, by causing a clean crack immediately underneath the string; and a precipitating-jar, shown in Fig. 153, will thus be obtained.

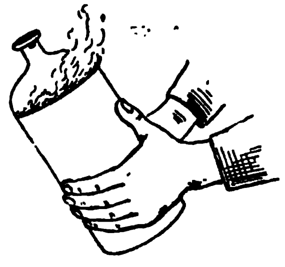
FIG. 152.

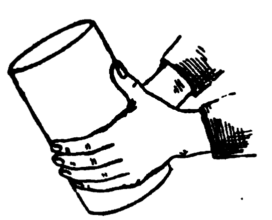
FIG. 153.

Holes may be bored through glass with a rat-tail file from which the end has been broken in such a manner as to present a sharp edge. * * * If the file be held at an angle of 45°, and the end of it kept wet with turpentine, it will bore its way through the glass in a remarkably short space of time, requiring only the aid of a slight pressure and peculiar twisting movement of the hand that guides it. * * * Some artisans use, in place of turpentine, a mixture of that oil with an equal volume of an ethereal solution of gum camphor; but experience will generally fail to prove any superiority for this compound over the plain spirit of turpentine.

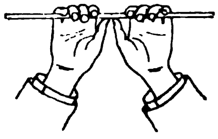
FIG. 154.

In the arrangement of certain laboratory apparatus it is often necessary to break, bend, and attenuate glass tubing. * * * Small, moderately thick glass tubing may be neatly broken by scratching it across one side with a sharp three-cornered file, then grasping it with one hand on each side of the scratch and the thumbs directly under it, and applying outward pressure, as shown in Fig. 154. * * * By holding the severed ends of the tube in the flame of an alcohol lamp, or Bunsen burner for a few seconds, the sharp edges may be rounded so that they will pass through a perforated cork without cutting or making a ragged edge.

A glass tube may be bent by holding it just above the flame of a Bunsen burner or alcohol lamp, and gradually rotating between the thumb and fingers until it is uniformly heated. It should then be passed to the right and left through the flame for the space of an inch or two on each side of the center of the proposed bend, and, when sufficiently softened, allowed to curve slowly in one direction. * * * The hasty application of too much pressure at this point is certain to distort the tube and form an imperfect curve.

Convenient stirring rods can be made by fusing and closing the ends of small glass tubing in a flame. * * * Remember that a thermometer makes a poor but expensive stirring rod. * * * Chemical flasks having flattened bottoms, shown in Fig. 155, are more convenient than round-bottom flasks, since they will stand firmly upon a sand-bath or table.

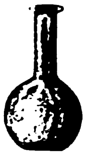
FIG. 155.

A set of brass cork-borers, shown in Fig. 156, will often be found very serviceable. * * * In using them, the small iron rod furnished with each set should be passed through the hole drilled in the cap, as shown in Fig. 156, to serve as a handle. The cork should be held firmly in the left hand, and the borer pushed through it with the right hand. * * * A perfectly smooth round hole can be cut by applying pressure carefully and at the same time imparting a twisting motion to the borer. An attempt to force the borer through quickly or without rotating it will invariably end in breaking off pieces of the cork. * * * The cutting edge of the borer should be kept sharp by means of grindstone or emery-paper. * * * When the borer will not cut a hole to exactly fit the glass tube to be inserted, select a borer which will cut a hole smaller than desired, and enlarge it by filing with a "rat-tail file." * * * After the cork has been cut and fitted to the tube, it can be swelled and softened by soaking in hot water. * * * Dipping the borer in solution of caustic soda or potassa or stronger water of ammonia will facilitate the boring of rubber stoppers.

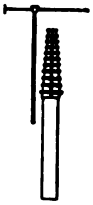
FIG. 156.

Cement for affixing glass labels to shelf bottles may be prepared by adding to one part of superior yellow wax, three parts of rosin, and melting the mixture in an open pan, with gentle heat, to the consistence of syrup. * * * To affix the label, place the bottle, perfectly free from moisture, on a table, in a nearly horizontal position, before you. Pour the melted cement on the hollow side of the label with a spoon, then apply the label to the bottle with gentle pressure. While the cement is soft, run the point of a knife around the edge of the label so as to form a groove in the cement and save labor in chopping off the exuded portion, which can be easily and safely accomplished after the cement has been allowed about one-half hour to harden.

Ordinary sealing-wax serves well for securely fastening handles into mortar pestles. * * * *Thoroughly* clean and dry the surfaces to be joined; then warm the pestle and pour into its socket a small quantity of melted sealing-wax, promptly insert the handle, and, when firmly imbedded, place at rest for a few days to allow the wax to set.

An inclined plane of grooved wood resting upon one end of the sink serves in draining recently washed mortars, graduates, and other apparatus. The drippings flow through the grooves into the sink, as shown in Fig. 157. * * * Some prefer such an inclined plane covered with corrugated rubber, the channels in which lead to the sink.

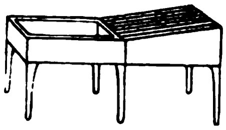
FIG. 157.

A tool-chest, containing hammer, hatchet, chisel, saw, plane, pinchers, nippers, hoop-driver, screw-driver, nails, screws, and other useful accessories, is a necessary part of a laboratory outfit. * * * The tool-cabinet shown in Fig. 158 can be purchased ready-made from the wholesale hardware dealers; or some modification of it can be improvised by the pharmacist to occupy a convenient place in the laboratory or cellar.

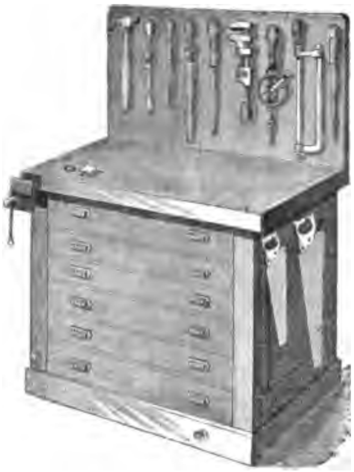
FIG. 158.

Every pharmaceutical student should possess, or have access to, at least three or four standard textbooks. * * * The following are recommended in the order named, and will prove sufficient to meet all ordinary requirements: 1st, a recent edition of the National or United States Dispensatory; 2d, Remington's "Pharmacy;" 3d, a recent edition of either Attfield's, Bloxam's, or Tidy's "Chemistry;" 4th, Oldberg's "Home Study in Pharmacy." * * * It is rarely good policy to undertake reading such books through by course. They should rather be kept at hand, convenient for reference, so that when a question arises or a subject of interest presents, information can be looked up at once. * * * Use text-books of the latest issue only—old books are misleading. Pharmacists must keep abreast of the times to be successful. * * * A scrap-book in which can be kept classified clippings representing hints and information which may prove valuable in trade or household, is often a desirable piece of property in the drug store.

The present edition of the National Formulary contains an excellent collection of tried practical formulas for unofficinal preparations frequently required by the dispenser. * * * Every pharmacy should be provided with a copy of this valuable formulary, which can be obtained at the nominal cost of seventy-five cents.

In view of a strong general inclination on the part of pharmaceutical students and experienced dispensing pharmacists to accept as unquestionably true any statement made in the Pharmacopœia or the dispensatories, a brief list of inaccuracies existing in these standard text-books is presented, not with intent to criticise work for which a fair-minded person can entertain nothing but most profound respect, but to enable students and pharmacists to make appropriate corrections in their text-books, and to learn incidentally that the practical pharmacist should take nothing for granted, but rather form a habit of calculating and reasoning for himself. * * * It is a common practice among pharmacists to consult, instead of the U. S. Pharmacopœia, one of the dispensatories, which furnish, together with essential principles, much useful and interesting information, and for the sake of convenience to employ, instead of the Pharmacopœial formulas given in parts by weight, the corresponding arbitrary formulas in which quantities are expressed in the familiar pound, ounce and grain, pint, fluidounce and minim. Inaccuracies in these converted formulas are, therefore, likely to prove particularly misleading to the unsuspecting operator. * * * On page 1467 of the National Dispensatory, fourth (1887) edition, syrup hydriodic acid is described as containing *ten per cent.* of hydriodic acid, instead of *one per cent.*, which is correct. * * * On page 1468, in the formula for the same preparation, *60* oz. av. (3¾ lbs.) is given as the equivalent of *5¾* fluidounces of water. * * * In the formula for solution of nitrate of mercury, on page 909, *three* fluidounces, instead of *six*, is given as the equivalent of 9 oz. av. of nitric acid. * * * On page 928, in the formula for solution chloride of zinc, *1200* grains instead of *120* grains of nitric acid—ten times the correct amount—is prescribed. * * * On page 984, in the formula for mixture of acetate of iron ammonium, *70* instead of 10 fluidrachms is given as the equivalent of 750 grains of syrup. * * * On page 1671 (p. 1645 in former edition), in the table of weights and measures, the weight of one imperial gallon of water is stated to be 7,000 grains, instead of 70,000 grains. * * * In the formula for tincture cinchona comp., on page 1522, *¼ oz. av.* instead of *½ oz. av.* is given as the equivalent of two parts serpentaria. * * * On page 930 *salicylic acid* instead of *benzoic acid* is prescribed for the preparation of lithium *benzoate*. * * * On page 1671, in the table of metric weights and measures, one gramme is stated to be the weight of 1 c. c. of water at *40*° C., instead of *4*° C., which is correct. * * * On page 1275, "*hydrobromate* of quinine" is given as the English title for quininæ *hydrochloras*. * * * On page 1534, in the formula for compound tincture of lavender, we are instructed to continue percolation until *100* parts of the percolate are obtained, when it is clear that *1000* parts is intended * * * Even in the U. S. Pharmacopœia we find *four* parts of water and *four* parts of alcohol prescribed in the formula for preparing a tincture of opium on page 351, when *forty* parts instead of *four* was intended; owing to the construction of the formula, however, this error is likely to prove more inconvenient than dangerous, since the operator is finally instructed to make up the product to the correct quantity. * * * Pharmacists who have occasion to use the National Formulary in practical work will do well to read carefully the list of corrections on page *X*, and make appropriate corrections on each formula in the book, so that the errors pointed out will be apparent at a glance when these faulty formulas are used, since some associates may never have had their attention directed to these inaccuracies, and those who have may overlook them at the time. * * * In addition to the errors noted on page *X*, it will be found that in formula No. 253 of the National Formulary for the preparation of compound mixture of chloral and potassium bromide, the directions for compounding instruct that the chloral and potassium bromide be dissolved in 12 fluidounces of water. This should be corrected to read "enough water to make fourteen (14) fluidounces;" the twelve fluidounces of water and the four ounces each of chloral and potassium bromide will make in solution more than one pint, and the alcohol and tincture of quillaia will increase it to eighteen or nineteen fluidounces, reducing the dose of chloral and potassium bromide accordingly. * * * Another discrepancy lies between the National Formulary formulas for Warburg's tincture and Warburg's pill. Each pill is stated to represent one fluidrachm of the tincture and to contain one grain aqueous extract of aloes. This would indicate that each drachm of tincture should contain one grain of aqueous extract of aloes, and that each pint should therefore contain 128 grains—while only 28 grains per pint is prescribed in the N. F. formula for tincture.

Don't attempt to memorize formulas. * * * Remember where formulas can be found, and strive to keep in mind only the proportion of medicament represented. * * * It is easy to remember that all U. S. P. opium preparations represent *ten per cent.* (1 in 10) of *powdered* drug; the single exception to this rule being paregoric. * * * The officinal diluted acids contain *ten per cent.* by weight of *absolute* acid; the two exceptions to this rule being diluted acetic and hydrocyanic acids. * * * The four officinal arsenical solutions each contain *one per cent.* of the arsenical salt indicated by its title. * * * It is never safe to manufacture a preparation from memory. Always have the formula before you. We have seen many druggists get into serious complications by being "too smart" in this direction.

The United States Pharmacopœia is not issued by authority of the United States Government, the national policy being opposed to interference in matters relative to restrictions upon professional practice. * * * The first issue appeared in 1820, by authority of the medical societies and colleges. Pharmacists were not invited to join in the work of revision until 1840. Since that time they have contributed freely to its improvement. * * * It is revised every ten years.

APHORISMS.

"Success is the best evidence of ability." * * * "Cleanliness is next to manliness in the drug business." * * * "Constant service brightens the bar of steel which would rust in idleness." * * * "Use your own brains, rather than those of others—learn to think and act for yourself." * * * "A philosopher is a man who doesn't want things he can't have." * * * "Never run in debt for what you do not really need, and then only when you see plainly a way to get out again." * * * "Do not meddle with business that you know nothing about." * * * "Never 'fool' in business matters." * * * "Genius consists in the power of doing much with little." * * * "Don't lose your presence of mind when an accident occurs." * * * "Don't decide hurriedly, but when a decision is reached act promptly." * * * "There is always room for a man of force, and he makes room for many." * * * "Be brave enough to be honest." * * * "Be just before you are generous." * * * "Tricks and treachery are the practice of fools who have not wit enough to be honest." * * * "Earn money honestly and spend it judiciously, and the problem of fortune is half solved." * * * "Consideration is due all things." * * * "Merit does not consist in gaining this or that position, but in being competent to fill any." * * * "When you speak to a person, look him in the face." * * * "One cannot always be a hero, but one can always be a man." * * * "It is always safe to be right, and there is no truer expedient than simple justice." * * * "Always let your conduct be such that you can have due respect for yourself. * * * "Your character cannot be essentially injured except by your own acts." * * * "A reputation for good judgment, for fair dealing, for truth, and for rectitude, is itself a fortune." * * * "It is really easier to pay a bill than it is to shirk it." * * * "Crimes lead into one another." * * * "In the long run the straight man gets there and the crooked man gets left." * * * "Goods well bought are half sold." * * * "Buy carefully and judiciously—the world is full of men who have things to sell for less than they paid for them." * * * "It is not the amount of goods sold, but the net profit, that makes you grow wealthy." * * * "Treat your customers as your friends by serving them in the best manner, and never let them be deceived or disappointed." * * * "You cannot expect to have polite, cheerful, well-behaved clerks unless you set them the proper example." * * * "Well paid and kindly treated clerks are not apt to go hunting new situations." * * * "Beware of the $500 clerk who lives in $1,000 style." * * * "The willingness of a new boy is in many respects more bother than the laziness of an old one." * * * "Don't talk too much." * * * "The man who keeps still when he hasn't anything to say is a public benefactor." * * * "It is a wise fool who knows enough to keep it to himself." * * * "If you wish to learn to speak well, first learn to hold your tongue." * * * "Keep your own secrets if you have any." * * * "When you don't know just what to say, say nothing." * * * "A word is but a little thing, but, like the strip of banana-peel on the sidewalk, it is often sufficient to give a man a frightful fall." * * * "When one has not a good reason for doing a thing, he has at least one good reason for letting it alone." * * * "Don't attend to the business of others—people have been known to get rich by minding their own business." * * * "The druggist who makes a failure of his own business usually knows how to run every other store in the neighborhood." * * * "When you hear a man loudly criticising the work of an associate, try to recall some equally meritorious achievement of his. You will usually conclude that he cannot do, or at least never has done, better." * * * "Fools rush in where angels fear to tread." * * * "When one jumps at a conclusion he rarely reaches safe footing." * * * "The man carried away with enthusiasm is frequently brought back in disgust." * * * "The higher a man gets in politics, society, or balloons, the heavier the thud when he falls." * * * "One of the gentlemen you need to study closely is the one who walks around under your own hat." * * * "There are thousands of people who want to revolutionize the world, yet never have time to fix up their own fences." * * * "It requires constant and continuous work to make the drug business a success." * * * "Don't be discouraged—it is always morning somewhere in the world." * * * "The lazy man aims at nothing, and usually hits it." * * * "Don't urge matters too hard—the best time to set a hen is when the hen is ready." * * * "When your hands cannot be usefully employed, attend to the cultivation of your mind." * * * "Don't think that you can learn without study." * * * "Don't believe everything you read in pharmaceutical journals." * * * "It's a good deal better to know nothing than to know something that ain't so." * * * "In pharmaceutical work, common sense is quite as important as technical education." * * * "Rest assured that after one or two years' association with the drug business you will believe that you know more about it than you will after an experience of ten or twenty years." * * * "Don't try to cheat."—Abraham Lincoln once said, "You can fool some of the people all the time, and you can fool all of the people some of the time, but you can't fool all of the people all of the time." * * * "There is a great deal of difference between believing that you possess knowledge and really possessing it." * * * "Be prepared to listen to advice from senior associates, and remember that juniors sometimes say wise things." * * * "An honest and industrious boy is always wanted somewhere." * * * "He who tries to do something and fails is better than he who tries to do nothing and succeeds." * * * "Don't rejoice over a competitor's misfortune — it is a fool's wisdom to laugh at the unfortunate." * * * "The man who is always cheerful gets, as he gives, the very best in life." * * * "The world is like a looking-glass. Laugh at it and it laughs back; frown at it and it frowns back." * * * "You can catch more flies with a spoonful of molasses than you can with a quart of vinegar." * * * "Never does a man portray his own character more vividly than in his manner of portraying another." * * * "Don't worry when people get offended at you for trifles; friendship which can be so easily lost is scarcely worth having." * * * "In order to judge another's feelings, remember your own." * * * "Be civil and obliging to all; it costs nothing and is worth much." * * * "Be slow in choosing a friend. Be slower in exchanging an old one for a new." * * * "No man is as good at home as he looks in his neighbor's album." * * * "Try to keep clear of prejudice, and be willing to alter any opinion you may hold when further light breaks in upon your mind. He is clever beyond precedent or weak beyond measure, who never sees reason to change his judgment of men and things." * * * "If you would make an enemy, lend a man money and ask for it again." * * * "He who does not engage in the quarrels of others will have few of his own." * * * "The man who minds his own business will have good, steady employment." * * * "Affectation is at best a deformity." * * * "It seems ludicrous to see a bald-headed druggist selling hair restoratives." * * * "Getting cheated yesterday is what prompts a man to cheat to-day." * * * "If the lion and the lamb lie down together, you may be sure the lion has had a good dinner." * * * "Don't kick every stone in the path—more miles can be made in a day by going steadily on than by stopping." * * * "Never get mad when the other fellow does. Wait till he cools off; then you will have the entire field to yourself." * * * "Rage robs a man of his reason and makes him a laughing-stock." * * * "Don't worry." * * * "Don't overwork." * * * "Don't blame hard work for infirmities, if you can attribute them to late hours and other dissipation." * * * "Exactness in little duties is a wonderful source of cheerfulness." * * * "Keep down expenses, but don't be penurious." * * * "Lay plans a little way ahead, but do not cast them in iron."

(*The end.*)

MAKING SODA-WATER.

BY THOMAS WARWICK.

Making soda-water is essentially a chemical process; consequently the quantities of materials to use, and the amount of soda-water they will produce, can be calculated on paper with the greatest ease. Yet in spite of this fact, there are few or no druggists who take the trouble to make the calculations for themselves. They either follow the directions given by the manufacturer, or else they allow the soda-fountain boy to use his own judgment in the matter. The consequence is that there is a considerable waste of materials in the process of making the soda-water, and a corresponding waste of time – for it must be remembered that if the generator fails to produce its maximum amount of carbonic acid gas, more charges will have to be run off than would otherwise be necessary.

Now, singular to state, the different manufacturers of apparatus in no case agree upon the quantities of materials to be used in charging the generator, the printed directions they give varying from one another to an incredible extent; and what is perhaps even more curious is that among practical soda-water manufacturers the proportions of materials used differ widely. I remember how, when I first began studying up this subject, I was completely dazed by the enormous differences I found between the figures of practical men—men who ought to have learned something from their own experience.

The trouble is that very few so-called practical men can perform a series of experiments systematically. In the first place, they never trouble to measure their ingredients accurately; they go by rule of thumb. As to ascertaining the temperature of the air or of the water used, they would laugh at any one who proposed such an unnecessary precaution, whereas, as a matter of fact, temperature plays a most important part in modifying the results obtained.

But, aside from these omissions, the would-be experimenters, instead of selecting a given unit of acid, of known quality, and gradually varying the different amounts of marble-dust used in the operation, will try first with a quart of acid and a quart of marble, and next with a gallon of acid and half a gallon of marble—in fact, seeming to take pleasure in changing all the conditions each time, instead of adhering to the true principle of experimentation, namely, that but one condition must be changed in each experiment.

It is therefore no wonder that the results obtained differ so radically, and that the total waste from improper proportions must amount to a large sum annually in the United States alone. I know of one prominent manufacturer of soda-water in this country who lost annually over a thousand dollars, simply because he did not use the correct proportions of materials in his generators.

This being the case, let us see if we cannot figure out what the required amounts are. As all druggists know, carbonic acid exists in all carbonates, and is usually liberated by the addition of sulphuric acid. This acid, being stronger than the carbonic acid, unites with the base and releases the carbonic acid in the form of a gas.

Marble dust is the carbonate generally preferred in this country, and hence I shall confine my remarks solely to this carbonate. One of the best marble-dusts on the market to-day consists of about fifty-five parts of carbonate of lime combined with forty-five parts of carbonate of magnesia, the amount of impurities present being so small as not to require being taken into consideration. I shall therefore base my calculations upon these figures.

When the marble-dust and sulphuric acid are combined, sufficient water being added for the crystallization of the sulphates of lime and magnesia, decomposition will take place, and the reaction may be expressed as follows: $55CaCO_3 + 45MgCO_3 + 100H_2SO_4 + 325H_2O = 55CaSO_4, 2H_2O + 45MgSO_4, 7H_2O + 100 CO_2$.

In other words, substituting the atomic weights of the elements in the above formula, we see that theoretically 93 ounces of marble-dust, 98 ounces of sulphuric acid, and 59 ounces of water, will produce 44 ounces of carbonic acid gas and 206 ounces of the sulphates of lime and magnesia.

The results of this simple equation are of such great importance to the soda-water manufacturer that it will, perhaps, be well to take up each point separately. In the first place, the amount of water which the formula shows us it is necessary to add is an item which has a practical significance that must not be overlooked. The figures show us that to produce carbonic acid gas it is not sufficient to mingle marble-dust and sulphuric acid. A large amount of water must be added—in fact, more than half as much water, by weight, as there is marble-dust employed.

Let us turn now to the second point which this formula shows us. The residue formed, as we have seen, consists of sulphate of lime and sulphate of magnesia, about one hundred and eleven ounces of the former to ninety-five ounces of the latter. Now the sulphate of lime is not soluble in water, while the sulphate of magnesia is very much so; hence, so far as the agitation of the two is concerned, a marble-dust containing a high proportion of the sulphate of magnesia will be easier to agitate, for the agitator-blade will more easily pass through a liquid than a solid.

But, on the other hand, singular to state, it is the liquid sulphate of magnesia that gives the most trouble from caking. The solid sulphate of lime is not very difficult to get rid of, but if the sulphate of magnesia is allowed to settle in the generator it will cake hard, and the carbonator will experience considerable difficulty in afterwards completely removing it.

Is there any remedy for this state of things? There is evidently one; it is to discharge the generator immediately after the operation has been performed. This is an excellent plan and one that cannot be too strongly recommended. Unfortunately, druggists have not always a sufficient number of portable fountains on hand, and they must then either waste the gas that is left in the generator or let the charge stand for a couple of days and run the risk of having it cake.

But I am thankful to say that there exists a method of preventing the spent materials from caking—a means so simple that it is astonishing there should be so much trouble on this score. The secret is merely to use a sufficient amount of water in the generator. As I have stated, the sulphate of magnesia is readily soluble in water; and hence, so long as there is sufficient water left in the generator body, so long will this salt be held in solution and be prevented from caking. This is the point where most operators make their mistake. They imagine that if they have enough water to prevent the marble-dust from caking they will have enough to prevent the spent materials from caking. They entirely overlook the water of crystallization required by the sulphates of lime and of magnesia. They forget that two molecules of water are required for every molecule of sulphate of lime, and that seven molecules of water are required for every molecule of sulphate of magnesium; they forget, in fact, that for every pound of marble-dust used, more than half a pound of water will be taken up from the generator and converted into a solid, so that, while there may be sufficient water present at the start to prevent caking, toward the end of the process (when even in the smallest generators eight or nine pounds or pints of water are absorbed) there will not be sufficient liquid left, and the spent materials will cake in the generator.

On the other hand, there is danger of using too much water in the generator; for if too large a quantity be employed, the acid will be over-diluted and will not be able to combine so readily with the carbonates. Moreover, the more water employed, the larger the generator must be, and consequently the more expensive the machine and the greater the waste of gas at each charge.

The problem therefore resolves itself into this: To find the smallest amount of water that will prevent all danger of caking by the spent materials, even when allowed to remain a few days in the generator? Obviously there is but one way to solve the problem, namely, by a practical test. In a series of experiments I observed, made with a view of elucidating this point, it was found that the proportions which gave the best results were as follows:

Sulphuric acid...........	100	parts by weight.
Marble-dust.............	112	" " "
Water..................	120	" " "

When these proportions were used it was found that the spent materials would not cake, even when left standing several days in the generator.

Looking again at our formula, the third fact that strikes us is that the carbonate of magnesia is far richer in carbonic acid gas than the carbonate of lime. The atomic weight of calcium being 40, and that of magnesium only 24.3, it follows that four pounds of carbonate of magnesia will produce as much gas as five pounds of carbonate of lime. Hence the richer a marble-dust is in sulphate of magnesia, the more economical it will be to use. This is a fact which must not be overlooked.

Turning now to the main point, we see, by referring to our formula, that theoretically every pound of marble-dust used will produce about half a pound of carbonic acid gas. This is an important fact in more ways than one, but among other things it enables us to calculate approximately just what quantity of materials will be necessary for charging a given number of portable fountains.

The weight of carbonic acid gas at atmospheric pressure and 32° F. is 0.12344 of a pound per cubic foot. At 60° F., however, which is the usual temperature for charging soda-water, the weight of the gas would be a trifle less, being only 0.11677 of a pound per cubic foot. Now when it is remembered that in a generator of a capacity of about fifteen gallons some sixteen pounds of sulphuric acid are used at each charge, producing about seven pounds of carbonic acid, it will be seen that the amount thus produced would occupy nearly sixty cubic feet—in other words, would at atmospheric pressure occupy about thirty times the space of the generator. Evidently, then, if the generator be closed, the gas cannot expand to its full volume, but is compressed; and if the charge were made without allowing any of the gas to escape, the pressure in the generator would be thirty times atmospheric pressure (14.7 lbs.), or 441 lbs. It is to this fact that is due the danger in manipulating soda-water machinery; it is for this reason that the operator must be careful to generate the gas by slow degrees, and to use it before the pressure has become too great. It is for this reason that the operator must beware of leaving his post when he has on more than a quarter of a full charge (and with large generators even less). For otherwise, if there is a leak in the acid chamber, the pressure may rise far beyond what the metal casting will stand, and even though the generator be provided with a reliable safeguard the result will be the loss of the charge and the straining of the generator.

We have now to consider another important matter, namely, the amount of acid and marble-dust required to charge a fountain of soda-water. The ordinary ten-gallon fountain of soda-water, having a total capacity of almost fifteen gallons, necessarily holds two cubic feet of carbonic acid gas. As water at 60° F. absorbs its own volume of the gas, the fact that the fountain is two-thirds full of water does not alter the matter in the least. Paradoxical though it may appear, it takes as much gas to fill a fountain that is already full of water as to fill one that is perfectly empty. Consequently we see that to fill an ordinary ten-gallon fountain to 150 pounds pressure (which is the pressure to be recommended for dispensing purposes), with water at 60° F., it would require about forty-two ounces of gas, so that the formula above given would really represent very nearly the proper proportions for making enough gas for one ten-gallon fountain; that is to say, every 93 ounces of marble-dust and 98 ounces of sulphuric acid will charge a ten-gallon fountain to 150 lbs. pressure. This formula will at once enable any druggist to calculate the exact cost of the materials he uses in making his plain soda.

Of course it must be remembered that these are theoretical figures, that in practice there is always some waste of gas through leakage, and that the materials in the generator are never wholly exhausted, there being both marble and acid that have not been neutralized. Moreover, it must be remembered that unless some means be employed for utilizing the gas that remains in the generator it will be wholly wasted, and the loss thus incurred must be taken into account in making the calculations. But assuming a large amount of loss from these causes, and assuming that the operation is carried on in a small generator, where the proportion of loss is always greater, actual experiments have shown that four quarts of acid and five of marble-dust will charge two ten-gallon fountains of water to 150 lbs. pressure.

It will be noticed from these figures that, whereas theoretically more acid than marble is required, in practice more marble than acid is used. The reason for this discrepancy is that, as neither ingredient is completely neutralized in an ordinary charge of a generator, and as marble-dust is far cheaper than acid, it has been found more economical to use a considerably larger proportion of the carbonate than is actually needed; hence the quantities I have given in another column are those that I should recommend as the most economical for soda-water purposes, everything being taken into consideration. In the formula I have given only the parts by weight; by measure they would be about as follows: Sulphuric acid five parts, marble-dust six parts, and water eleven parts.

In some similar experiments tried with a large generator, I may mention that in a generator of about ninety gallons' capacity 526 pounds of sulphuric acid and 655 pounds of marble-dust produced a charge of fifty ten-gallon fountains at an average of 158 lbs. pressure, and ten ten-gallon fountains at an average of 135 lbs. pressure, or, in other words, about sixty-one fountains at 150 lbs. pressure.

Theoretically this charge should, as we have seen (allowing for the gas remaining in the generator), have produced about eighty ten-gallon fountains, so that the waste is really nineteen fountains, or if we include the gas remaining in the generator the loss is twenty-five fountains—that is to say, more than one-third of the entire amount of gas produced.

It is, therefore, necessary to always calculate upon a loss of at least one-third on the theoretical figures in calculating the amount of materials required to produce a given quantity of soda-water.

THERAPEUTIC NOTES OF INTEREST TO PHARMACISTS.

BY H. M. WHELPLEY, PH.G., M.D.

Piles, when painful, as they usually are, should be anointed with the following salve after each operation of the bowels:

Muriate of cocaine	3 grains.
Sulphate of morphine	10 grains.
Sulphate of atropine	3 grains.
Tannin	4 grains.
Vaselin	5 drachms.

Make an ointment.

As an antidote for hydrocyanic-acid poisoning, the peroxide of hydrogen has been given. It is given both by mouth and hypodermatically until all signs of the poisonous effects of the acid have disappeared. Prof. Kobert was first to experiment with this antidote.

Ringworm of the scalp is treated in a very simple manner by a German physician who removes all the hair on the affected part of the scalp; this facilitates the application of the usual remedies.

Women nursing children should be careful to have the babies nurse both breasts. According to the *Lynn Medical Journal*, statistics show that a greater number of children die when but one breast is used than in those cases where the child nurses both breasts.

A Western quack, according to the *Medical Record*, advertised that he had cured thirty cases of diphtheria, but before he had an opportunity of curing any more patients the Board of Health arrested him for practicing medicine without a license.

The general tonic used at Bellevue Hospital has the following formula:

Sulphate of quinine	30 grains.
Tinct. of nux vomica	160 minims.
Tinct. of chloride of iron	160 minims.
Dilute phosphoric acid	1 fluidounce.
Syrup, q. s. ad	4 fluidounces.

The dose is a teaspoonful two or three times a day.

Cures for the alcoholic and opium habits are now becoming quite popular. The *Kansas City Medical Journal* says the way to be cured is to stop without any tapering off and take the following mixture in tablespoonful doses before meals:

Sulpho-carbolate of sodium	3 drachms.
Sulphate of quinine	16 grains.
Sulphate of strychnine	½ grain.
Compound syrup of hypophosphites	2 fluidounces.
Water, q. s. ad	8 fluidounces.

Leucorrhœa or whites is quite a common complaint. Dr. Louis Bauer claims that it is often due to nothing more than constipation. The condition of the bowels should be ascertained before following other treatment, if this is the case.

Tapeworms resist many remedies, so that new ones are always in demand. One physician states that he derived great success from eight-grain doses of salicylic acid every hour, until six doses were taken; this was followed by a large dose of castor oil. We suppose the usual precautions of diet should be followed to prepare the patient for the remedy.

A new tapeworm remedy which is at least as good as hundreds of others which have been popular, is the following:

Lactate of strontium	1 drachm.
Water	1 fluidounce.
Glycerin, q. s. ad	4 fluidounces.

The dose is two teaspoonfuls every morning for four or five days.

The telephone disease is one of the penalties paid for enjoying the convenience of this useful instrument. A Paris physician has observed that those who frequently use the telephone sometimes present a series of ear disturbances similar to those found in parties who are subjected to continual loud noises. The treatment is the same as for any inflammation of the middle ear. Of course, use of the telephone must be suspended until the ear regains its normal condition.

Sulphonal for seasickness is one of the new uses to which this remedy has been placed. A writer in the *British Medical Journal* says that it is best to take a dose of the medicine immediately on getting on shipboard; this should be repeated if the seasickness becomes depressing. The same writer recommends abstention from food during the period the seasickness lasts. He gives iced champagne, followed by light clear soups, and the patient is kept in a recumbent position until well. In cases where the patients become greatly prostrated by the vomiting, they are given injections of brandy and eggs.

Chestnut leaves for ivy poisoning is the latest sure cure for this troublesome disease. An old practitioner says he has tried everything recommended, and finds that a strong decoction of chestnut leaves used to bathe the inflamed parts every three or four hours will cure the trouble within twenty-four hours.

Sterility, according to the *Brooklyn Medical Journal*, is frequently due to nothing more or less than an acid condition of the vaginal secretions; in such case the vagina should be washed out at bedtime with about two quarts of warm water containing one ounce of bicarbonate of sodium and four ounces of glycerin. Before adopting such treatment it is always best to decide whether the difficulty lies on the wife's side of the house.

A gargle for sore throat, used in France, where gargles of all kinds are popular, is made as follows:

Phenol crystals	30 grains.
Absolute alcohol	2 fluidrachms.
Oil of peppermint	10 drops.

The directions given by *Les Nouveaux Remèdes* are to add ten drops of this mixture to a glass of hot water, and gargle with it night and morning.

Plenty of water for little ones is recommended by a physician in the *Times-Register*, who says that the children should be allowed to bathe themselves in a large tub of warm water placed in the middle of the nursery. We would add that it is well to keep an eye on the little ones, for children have lost their lives in less than a tub of water.

Crabs, as they are vulgarly called, usually cause their host to visit the drug store for blue ointment. A writer in the *British Medical Journal* strongly recommends commercial benzin as a much more cleanly, convenient, and effectual remedy. He bathes the affected parts freely for three or four minutes, and states that not only were the insects killed, but every nit as well. The patient, however, had better not make the application near a light or fire of any kind, as an explosion is likely to occur in case the benzin vapor comes in contact with the fire.

Boils can be cured, says the *New York Medical Record*, by rubbing them with an ointment of one part of red oxide of mercury in one hundred parts of lanolin.

Turpentine is a remedy which is very disagreeable to some patients. A writer in the *Therapeutic Gazette* proposes the following formula, which he says will entirely disguise this volatile oil:

Oil of turpentine	1 fluidounce.
Glycerin	1 fluidounce.
Mucilage of gum arabic	1½ fluidounces.
Water q. s. ad	8 fluidounces.

M.

The usual dose of this mixture is one tablespoonful. Of course it should be shaken before taken.

Calomel for piles is not a new remedy, but has recently been strongly recommended by a prominent London physician, who states that local applications of this powder will relieve all pain and annoyance and enable the patient to attend to his usual business without inconvenience.

Lactic-acid crayons are a new form for the use of this acid in the treatment of certain fistulæ. A medical journal states that these crayons are used by Dr. Zupple, assistant of M. Scheder (of Hamburg), for the cauterization of tuberculous fistulæ. "They are prepared by taking equal parts by weight of lactic acid, gelatin, and water, warming gently to liquefy, and then adding thirty parts of menthol. The mixture is now poured into moulds, and placed on ice for several days; the crayons are then dried over chloride of calcium for about ten days, after which they are coated with collodion, which serves to keep them indefinitely. In using these crayons, cut off the end obliquely with the scissors and introduce the cut end into the fistula. Soon the crayon begins to melt, and cauterizes even the deepest parts; and after some days the empty collodion coating may be dispensed with, if desired, the crayons being kept in oil or benzin. Starch or gum tragacanth may replace the gelatin, but the product is harder and not so elastic."

Hair tonics are almost as numerous as the hairs on the head of a Western cow-boy. One that Dr. Falk recommends very highly is made as follows:

Fluid extract of jaborandi	1 fluidounce.
Tincture of cantharides	1 fluidounce.
Sulphate of quinine	1 drachm.
Glycerin	2 fluidounces.
Bay rum q. s. ad	16 fluidounces.

Mix. Rub into the scalp every night.

Poulticing the ear in case of pain is quite a common practice among people who do not think it worth while to send for a physician. A writer in the *International Medical Magazine* states that the operation is not as simple as one might suppose. What should be done, he says, is to fill the external auditory canal with lukewarm water while the head is resting on the unaffected side. A large flaxseed poultice is next applied over the ear as hot as can be borne. This poultice keeps the water warm and acts as a conductor to the inflamed membrane.

Cream is better than butter on account of containing more fluid oils—so says a medical writer who prescribes it for consumptives. Persons who are inclined to cold extremities also improve on a cream diet. He considers it much better than cod-liver oil.

Hives are treated locally, according to the *College and Clinical Record*, by the following application:

Phenol	2 drachms.
Boric acid	4 drachms.
Glycerin	1 fluidounce.
Alcohol	2 fluidounces.
Water q. s. ad	16 fluidounces.

Alum when used in baking-powder is said to be detrimental to digestion, on account of its rendering the phosphates insoluble—so says Dr. Homan in the *Medical Fortnightly*. Alum is used by bakers in order to whiten their bread.

Hysteria is sometimes treated on the principle of giving the patients as disgusting remedies as possible, with an idea of bringing them to their senses. Dr. Da Costa, in the *College and Clinical Record*, advises a more rational treatment and recommends the following:

Valerianate of zinc	2 grains.
Valerianate of iron	1½ grains.
Extract of belladonna	$\frac{1}{16}$ grain.

The above is the preparation for one pill, the dose being this amount three times a day. It is also essential that the patient should have a full meat diet, be given tonics, and take plenty of out-door exercise.

Washing infants immediately after birth is a practice followed in most civilized countries. Dr. Parsons, in the *Medical News*, objects to the method in which the first bath is usually given. He recommends a little skirt with sleeves and hood, made of some soft unirritating material—for example, Canton flannel—in which the infant should be placed after having been quickly rubbed with pure hog's-lard. Here it should remain for four or five days, when it would become accustomed to the lowered temperature and could with much more safety be washed; but as this would not satisfy the average mother, he would advise covering the head and body with lard, then quickly placing the child in a tub of water at about 130° F., there cleaning and washing the body with a soft linen cloth. He has never seen a child so treated suffer from catarrhal troubles.

Nearsightedness is now traced by medical authority to the indoor life of civilized nations. A writer points out that this trouble is seldom found among the Indian tribes. He claims that classes of boys under the care of responsible teachers should have camping-out parties for weeks at a time. They could be taught geology, mineralogy, botany, and kindred subjects while they are cultivating the far-sightedness for which the Indian is so famous.

Sexual weakness, when resulting in chronic cases of seminal emission, or loss of semen, should be treated, according to the *Daily Medical News*, by giving two- or three-grain doses of monobromide of camphor four times a day.

How to Drink Milk is the title of an item now going the rounds of the medical journals. The writer states that a glass of milk should not be drank at once. Three or four minutes' time should be consumed in swallowing it, so that the milk will not form a solid mass as it reaches the stomach. Many people in the city find more difficulty in procuring good milk than they do in drinking it when they have it.

An anti-emetic mixture used at the Charity Hospital of New York City is made as follows:

Creasote	12 minims.
Dilute hydrocyanic acid	30 minims.
Powdered gum arabic	6 drachms.
Powdered sugar	6 drachms.
Water q. s. ad	2 fluidounces.

A teaspoonful as required.

Trichiniasis is treated by a writer in the *Boston Medical and Surgical Journal*, who points out the danger arising from imperfect cooking of pork. He says that a temperature of 170° F. will destroy the parasite, but he holds that the interior of large hams does not reach that point during ordinary cooking.

CHEMISTRY.

THE POSITION OF ORGANIC CHEMISTRY IN THE DOMAIN OF SCIENCE.

BY E. A. SCHUBERT, B.S., PH.G.

Organic chemistry is the result of the labors of the nineteenth century's chemists—modern in its researches, modern in its achievements, and gleaming with so many practical, valuable, and ever applicable discoveries that in the short period of nine decades it has revolutionized the chemical division of the scientific world. Throughout Europe and America, in every mercantile establishment, factory, farm, mine, and fireside, this wonderful science may be found in various forms, the absence of which would mean to the people many a lost (or, rather, undiscovered) art or science. Recent reports show ten millions of people and five hundred millions of capital directly or indirectly engaged in the development of organic chemistry.

It has lent a helping hand to the furtherance of physics, botany, geology, astronomy, and pharmacy, which in turn have increased the desire for scientific knowledge, and aided in the establishment of schools and colleges.

As all great achievements meet with opposition from those who are interested in another branch of the same calling, so also did Wohler, Liebig, and their disciples meet with the disapproval of their older but less aggressive brothers.

Short as has been the growth of the science of carbons, it has sufficed to place on record two thousand eight hundred and ninety-seven separate and distinct chemical compounds—almost twice the number of those found in inorganic chemistry—each of them of a higher order, more complicated, and more useful, than any of the discoveries in the latter field. Out of this large number of compounds discovered we find one-third to be of medicinal value, one-half are used in the arts and manufactures, while the remainder are of general use and importance.

After this general survey I desire for a few minutes to present in as brief a manner as possible the relations of organic chemistry to the industrial development of the day, showing by each successive step how largely the scientific world depends upon its investigations and results.

But recently the chief chemist of the United States announced that, through the untiring efforts of Liebig and the influence of his works, agriculture had been elevated from an amateur to a scientific field of labor, with every farm an experiment-station, every farm-house a laboratory, and every farmer a chemist; while everywhere we find new theories advanced for the fertilization and tilling of the soil, based upon the conversion of the clay hills near Giesen, Germany, into a fertile garden.

This one experiment has led us to the undertaking of many similar ones, and has occupied the labors of the chemists for the past thirty years. It was the originator of that large and extensive industry, the manufacture of fertilizers, which has resulted in the investment of capital, the employment of labor, the advancement of science, the increase of intelligence, the desire for experiments, and the establishment of experiment-stations throughout the scientific world.

In the fields we find growing the cereals, such as corn, wheat, barley, cotton, and many others having the same structure, and cultivated by the hand of man. Little do we think, unless we have studied scientific works, that out of these cereals we may extract certain chemical organisms which if carried far enough will give us dozens of different solid and liquid compounds of chemical composition, each higher and more complicated than those which are derived from the elements. Yet through the labors of our chemists we have been advised that *starch*, which exists in every cereal, is there in such proportions as to give us a chemical compound; this same starch, when treated with water, gives us the compound known as *maltose;* this again, when treated with water and the addition of more starch, yields the compound *glucose;* and glucose is the basis of an immense industry, and in the markets of the world is sold instead of syrup, although it shows a different chemical formula. Should fermentation not be arrested at this stage, *alcohol* will be formed; then it may be converted into *aldehyde*, and by oxidation the well known *acetic acid* is produced. These are but the few principal ones out of the many others of minor importance found in the same products.

But taking the grain as a whole, subjected to germination with several other stages, and we obtain out of barley, malt; out of corn, sour mash; while other cereals yield similar products; these products, taken at this stage, may respectively, through a lengthy process, be converted into our liquid malts, extracts, crude whiskeys, beers, and other alcoholic products whose names are as varied as their numbers.

The alcohol which is obtained by this process—and almost the entire quantity manufactured is so obtained,—when treated with acids, both organic and inorganic, gives the large variety of ethers and their compounds, which are growing constantly in numbers until more than fifty are known and recorded to-day.

With all this variety of chemical products found in the cereals, there still remains much more of interest and importance to be found; but there are many more in this same line to which I must allude, among which the flour industry stands prominent and cannot be ignored. Out of those large mills and elevators we obtain seven different compounds, the principal one being *dextrin.*

Even the straw has proved itself a tube of chemical importance, and has given us the extensive strawboard works which grace so many cities of our land. A visit to one of these is a practical lesson in chemistry, well worth the time it costs. Besides strawboard, vegetable dyes numbering more than seventy-five have in the meantime been recorded in the register of organic chemistry.

But down in the Sunny South, birth has been given to a new industry, which far exceeds all expectations and stands next only to the *coma* of cotton itself. It formerly was the opinion of the people that nothing derived from cotton was of any importance save the coma. Since then the large amount of seed which annually was going to waste attracted the attention of both science and capital, which, invited to this field of research and investment, soon achieved the establishment of the cottonseed-oil mills, the product of which can be substituted for a larger variety of fixed and volatile oils than any other oil ever discovered.

Field and forest were alike invaded to find what they would yield to this eager army of workers, who for their labors have been rewarded by the large amount of essential oils found in the many different varieties of trees, herbs, and flowers. Not only has the volatile oil been extracted from them, but fixed oils, stearoptens, alkaloids, glucosides, neutral and proximate principles—each of use to man, each giving rise to an industry by itself, and each a division of that large class of organic materials which without exception claim methane for their parent.

Prominent among the products of the vegetable kingdom is olive oil. This has yielded to us stearin, palmitin, olein, and several other similar compounds, which have aided us in establishing the soap, candle, and glycerin factories. Each of these produces a large number of compounds of the higher fatty acids, while glycerin is one of the most popular alcohols we have upon the market to-day, and is the originator of the class of powerful explosives known as the nitrosyls, or nitroglycerin and its derivatives, of which I need not speak.

In the same manner I might return to the organic matter of the earth, and enumerate more than fourteen hundred different compounds and their methods of preparation, at the same time showing that they owe their origin to nothing more than the agricultural experiment-station, which at the present time is developing a new branch of this science—the cultivation of sugar-cane and the manufacture of sugar—of which the United States Chemist says, "Never in the history of this Bureau has so much enthusiasm prevailed over the establishment of a new and profitable industry." It certainly has wide proportions, for throughout those States south of the Missouri and west of the Mississippi is a large field naturally adapted for this purpose, as demonstrated by experiment, which in the future will yield all the sugars, molasses, and many of the acids and spirits needed in this growing nation. Little is known of this new industry, yet as each succeeding bulletin is sent forth from the press it conveys to the people evidence that it is becoming more than a mere experiment and will before long be classed among the arts of scientific organic chemistry.

Even the Floridas and Californias have been invaded in this eager search for organic compounds. There we find the lemon and the grape cultivated, the former of which gives to us the large amount of citric acid used in pharmaceutical preparations; while the latter yields fine wines and brandies—in the vineyards of the Pacific Slope we see huge tanks erected, in which fermentation takes place; then after the removal of the liquid we find a large amount of white precipitate called argols, which on purification yields tartaric acid and the tartrate preparations.

But man is an aggressive creature. He is never satisfied with a limited knowledge of a subject. Consequently he is ever on the alert for some new developments. Having made such marked progress in the chemical development of the cereals and plants of the surface of the earth, he now turns his attention to the fossiliferous deposits beneath the surface. There, in the extensive coal-beds, he finds much to interest him.

Through the burning of the coal in the grate, he discovered the gas which has done so much in the development of a new and improved method for the generation of heat and light. To obtain an idea of the magnitude of this one industry we need but to study the special consular report of the United States which but recently was published by the Government. Certainly it is amazing to learn the amount of coal consumed annually, the number of cubic feet of gas manufactured annually, and the large amount of capital invested in its direct development.

The by-products left after the manufacture of the gas have developed for us the large number of valuable compounds known as ammonias. Even the dirty black residue which was a "pest" to the manufacturers—coal tar—has been the source of a mine of wealth to the owners, and has already contributed many astonishing chapters to the history of science. Out of this we have obtained the light and heavy oils, which latter by distillation and redistillation yield the phenols, cresols, and other tarry acids; these again, through various processes, yield the anilines, the discovery of which has revolutionized the art of dyeing, thus giving to the world once more a new and valuable industry.

From this one product of coal and its compounds we have up to date obtained more than one thousand separate and distinct products; the statement of which we are almost inclined to disbelieve when we gaze upon a chunk of coal.

Unlike these products are those which are extracted from the living forests. These, through the burning and subsequent distillation, have given us the wood creasote, wood tar, turpentine, resins, plasters, and many other products. These, by means of complicated manipulations, have given us the series of valuable compounds known as acetone, methyl alcohol, acetic acid, crude wood vinegar, light and heavy oils, and charcoal.

But farther down in the earth, through man's ingenuity, we have discovered Nature's gaseous vapors, generated and ready for use; associated with these are found the various qualities of earth oils, or petroleum. The first of these compounds abounds in my locality, while the latter also is found with us, stored up in large subterranean caverns, as well as in many other sections of the world. This has been one of the greatest discoveries of the world, as well as one of the most important; it has given us cheap fuel and cheap light, has builded both cities and fortunes, and at this day there is no industry which individually attracts more attention than does that of petroleum and its compounds. In order to illustrate and establish the magnitude of this industry I suggest a careful perusal of some of the consular reports, the last census report, the reports of stock exchange and manufacturers. But better than this, if you should be so fortunate as to visit the city of Findlay, Ohio (where the Ohio Pharmaceutical Association will convene in

May next), you will find even more striking illustrations of this industry than those of which I have spoken. It will show for itself the wonderful scientific researches which had to be made before its discovery, since which time it has given us at the refinery such compounds as chymozene, rhigolene, gasoline, and petroleum in the gaseous and liquid condition, with its many other similar products and uses. Of the solids which are found after distillation we have a black precipitate which through a simple process yields us black paraffin, lubricating oil, yellow wax or vaselin—each of these the basis of an industry by itself, though traceable to a common starting-point.

What more is there to be said? I have in a hurried manner described this wonderful science which, so far, has distanced all other sciences. I have indicated the mighty power which it holds in various arts and manufactures. What more can be said? Nothing, save that in the future, as other great chemists take the place of those who are with us to-day, and judging the future by the past, we may expect still greater developments of the science of organic chemistry; the coming of which we shall await patiently and welcome when made known.

Archbold, Ohio.

BOTANY AND MATERIA MEDICA.

THE WILLOUGHBY LAKE AND MOUNTAIN FLORA.*

BY H. H. RUSBY, M.D.

The region whose flora is treated in this paper possesses all the peculiar charms which characterize our Northern woods in general, and which most of us have had the pleasure of enjoying in Northern Pennsylvania, Northern New York or New England, and even so near home as among the Catskills. At Willoughby, lying in the extreme north of Vermont, these charms are greatly intensified, and this is especially true of the high mountains which we find in that section, their summits corresponding to a latitude considerably higher, so that Willoughby Mountain, Smuggler's Notch, and Owl's Head have become celebrated regions for the collection of far Northern and rare plants. Again and again in Gray's Manual do we encounter a reference to some rare plant which barely finds a foothold within our borders, and find it accorded to Willoughby Mountain. Few localities within the Manual region have been more visited by botanists, and yet there has been very little specifically written in reference to the flora. The only article which I have encountered is that of Mr. Chas. E. Ridler in Appalachia, vol. iv, p. 64. At this place I spent several weeks during last summer, in late July and early August, during which visit so much of interest was encountered that I have considered an account of the plants worthy of being brought before this meeting. I have noted only the plants of greatest interest, most of them collected by myself. Mr. Ridler's list is much more complete.

Willoughby I reached by carriage, six miles from West Burke, a small station on the Boston and Maine Railroad. It can also be reached from Barton, at the other end. The ride from the West Burke station is through a sparsely settled region, over a most beautiful road among high and lovely hills, partly cultivated, but largely forested with conifers of elegant form and lovely shades of foliage. A stream to the left of the road flows through a deep tamarack swamp and lends great picturesqueness to the scenery. Long before reaching the Lake we see its two high mountains rising abruptly—just such elevations as in a prairie country would be called "buttes." One of these mountains stands upon, or rather forms, each side of the lake, which lies, narrow and deep, between them, leaving just room upon the northeastern side for a wagon road to skirt the base of the mountain. At this point the lake is scarcely a half-mile in width, but it stretches as a crescent-shaped body around the mountain to the eastward, having a total length of some six miles, and becomes a mile in breadth. Near the southeastern end of the lake the hotel (the Willoughby Lake House) is situated, while far off in the distance we can see the top of the Owl's Head, situated across the border in Canada. Between Lake Willoughby and the Owl's Head lies Lake Memphramagog. Of the natural beauties of the location and the loveliness of the lake, seen under different skies and of ever varying colors, I shall not attempt to speak, for only a professional writer could do them justice; but I cannot pass without praising the location, the hotel, and its proprietor Mrs. Richardson, nor without recommending everyone who can afford a week or two for a delightful vacation rest to try Willoughby.

The general features of the region are an abundance of rather heavy forest of the ordinary northern type, including Coniferæ (excepting pines), sugar maples, birch, and beech, with a scarcity of oak and chestnut. The waters, both of stream and lake, are very clear, and the streams flow alternately down rocky hillsides and through deep sphagnum and tamarack swamps, very difficult to penetrate. The special features of the flora are the great abundance and variety of mosses, ferns, Lycopodiums, orchids, and Ericaceæ. The habitats of special interest for search are:

(1) The sphagnum swamps.
(2) The birch and evergreen forests.
(3) The moist, verdant, and partly wooded steeps.
(4) The bare and partially dry cliffs.

So far as I could see, the mountain summits were not high enough to present any alpine or other very special features.

Scattered about the country, especially to the north-ward, are certain "Bald" mountains, appearing from a distance entirely bare and rocky, very steep and rough, which I found no opportunity of exploring, but which would doubtless furnish many rarities. Before exhibiting and remarking upon the individual plants of interest collected, I propose to exhibit a few photographs, taken mostly by Mr. Wm. A. Lorenz of Hartford, and very kindly presented to me for the purpose of making lantern slides for this occasion.

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* Read before the Torrey Botanical Club, Nov. 30, 1892.

[Lantern views were here exhibited showing the beautiful lake lying between its two high mountains, with the Owl's Head in the distance, and again (taken from the other direction) looking backward toward the hotel; the hotel as seen from several points of view, showing the forest-clad hills by which it is surrounded; a view in a thick forest of silver birches, the road at the base of the mountain, with the lake upon the other side, magnificently shaded by its natural groves, besides the following, which require special notice: "Fern Cave" is a natural grotto beneath an overhanging rock near the foot of Mount Horr, upon the southwestern shore of the lake. Here the ferns, especially *Onoclea Struthiopteris*, *Cystopteris bulbifera*, and *Asplenium filix-Fœmina*, are astonishingly large and numerous. Facing the Fern Cave, and upon the other side of the mountain, is Mount Annanance, or Willoughby Mountain as it is commonly called. This mountain rises nearly 2,000 feet above the lake and 3,800 above the sea. The upper half consists of precipitous and nearly bare cliffs, the lower of broken material which has fallen from these cliffs and furnishes a footing for the climber. The most of this lower portion is covered with rather heavy timber, except at certain places where we have gullies, known to the natives and visitors as "slides." These slides furnish ready means of ascent to the cliffs above, the base of which cliffs constitutes the locality commonly known as the "Flower Garden" or the "Garden of Eden." Another picture of interest was a view in the bogs, which showed all the interesting plants peculiarly characteristic of a cold northern bog.]

The plants of special note belonging to the different localities were as follows:

Of the "Flower Garden."

Hedysarum boreale, Nutt.
Sysymbrium humile, Meyer.
Carex canescens, var. alpicola.
Prunus Virginiana, L.
Saxifraga aizoon, Jacq.
Saxifraga aizoides, L.
Saxifraga oppositifolia, L.
Primula Mistassinica, Mx.
Draba incana, L.
Astragalus alpinus, L.
Prenanthes serpentaria, var. nana, Gray.
Artemisia Canadensis, L.
Aralia hispida, Vent.
Quercus rubra, L.
Maianthemum Canadense, Desf.
Deyeuxia Canadensis (Mx.), Beauv.
Deyeuxia neglecta.

The wooded steeps to the southwest of the Lake, besides yielding a large portion of the ferns, produce *Lonicera ciliata*, L., and *Erigeron hyssopifolius*, Mx.

Of the Sphagnum Swamps and Bogs.

Nymphæa advena, Solander.
Ribes rubrum, L., var. subglandulosum, Maxim.
Linnæa borealis, L.
Eupatorium perfoliatum, L.
Eupatorium purpureum, L.
Cnicus muticus (Mx.), Pursh.
Senecio Robbinsii, Oakes.
Moneses grandiflora, Salisb.
Cassandra calyculata (L), Don.
Kalmia glauca, Ait.
Veronica Americana, Schum.
Utricularia cornuta, Mx.
Lycopus Virginicus, L.
Scutellaria galericulata, L.
Larix laricina (DuRoi), B. S. P.
Iris versicolor, L.
Potamogeton heterophyllus, Schrad.
Sagittaria variabilis, forma hastata (Pursh.), Engl.
Eriophorum alpinum, L.
Eriophorum Virginicum, L.
Carex echinata, Murray.
Equisetum palustre, L.
Equisetum limosum, L.

And a great variety of Sphagnums and other mosses which were not collected.

Of the Forests.

Actæa alba, Bigelow.
Actæa rubra, Willd., with red fruit, and the same with white fruit, both forms equally abundant.
Circea alpina, L.
Mitella nuda, L.
Tiarella cordifolia, L.
Galium lanceolatum, Torr.
Panax quinquefolia, L.
Pyrola chlorantha, Sw.
Pyrola secunda, L.
Pyrola elliptica, Nutt.
Plantago Rugellii, Dec.
Alnus viridis, D.C.
Betula papyrifera, Mœnch.

Of the Region in General.

Lobelia Kalmii, L.
Parnassia Caroliniana, Mx.
Drosera rotundifolia, L.
Geum strictum, Ait.
Rhamnus alnifolia, L'Her.
Ribes Cynosbati, L.
Ribes oxyacanthoides, L.
Campanula rotundifolia, L.
Vaccinium Canadense, L.
Lycopodium lucidulum, Mx.
Lycopodium annotinum, L.
Lycopodium obscurum, var. dendroideum, Gray.
Lycopodium clavatum, L.
Lpcopodium complanatum, L.

I would offer the following remarks concerning a number of the species enumerated here. First of all I call your attention to the interesting Senecio of this region, which is now described as a species for the first time.

SENECIO ROBBINSII, Oakes, Ms. in Herb. Columb.
S. aureus, var. Robbinsii, Gray, in Herb. Columb.
S. aureus, var. lanceolatus, Oakes, *Hovey's Mag.*, May, 1841, and Thompson's *Gazetteer of Vermont*, T. & G., Fl. N. Y., ii, 492.
S. aureus, var. Balsamitæ, T. & G., form of, Gray in Syn. Fl., I, part 2, page 391.
S. aureus, L., form of, Gray l. c.

From an oblique rhizome, erect, very slender, 2 or 3 feet high, glabrous. Root leaves 3 to 6, occasionally more, erect on very slender petioles, 4 to 8 inches long, the blade 1½ to 3 inches in length by ½ to 1¼ in breadth, lance-oblong, acute or obtusish, the base short-cuneate to sub-cordate, sharply and unequally serrate; the cauline sessile and partly clasping, but some apparently petioled by the intervention of a more or less long, naked portion of the midrib, serrate above, below lacinate-toothed to distantly lancinately lobed. Heads mostly 8 to 12, on long, sometimes very long, slender peduncles, ⅜ inch high. Scales lance-linear, acutish, ⅔ as long as the disk-flowers. Achenes linear-oblong, sharply ribbed. Occurring in wet meadows and bogs along the border of woods or in otherwise partly shaded situations, northern New

England and New York, also in North Carolina. Collected by Robbins at Brownington, Vt., T. G. White at Franconia, N.H., Dr. Britton and Mrs. Clark at Mt. Marcy in the Adirondacks, Rusby and others at Willoughby, Vt., and by Messrs. Small and Heller in North Carolina.

It is a little strange that this fine species of Senecio has so long escaped publication. It is probably due to the fact that the comparatively few botanists of the past generation who have dared say what they thought, never saw it in a growing state. In the herbarium it is not difficult to mistake for *S. aureus*, but not so when growing. During the past season it was almost simultaneously discovered by Messrs. Britton, Small, and myself, and each of us at once resolved to describe it as a species. Mr. Oakes, who first described it from Robbins' specimens as a variety, had a strong feeling that it was distinct, and wrote on the label: "If this is a new species I should be glad to have it called *S. Robbinsii*." Out of deference to Mr. Oakes, although it is straining a point, I give him credit for the species. Upon the same sheet Dr. Gray writes: "*S. aureus*, var. Robbinsii (an sp. nov.?)," but in later years, misled by its great resemblance to *S. aureus*, he assigns it to a very insignificant position.

The ferns of Willoughby are worthy of special mention, because of the large number of the species, as follows:

Aspidium acrostichoides, L.
Aspidium aculeatum, Sw., var. Braunii, Koch.
Aspidium Clintonianum.
Aspidium cristatum, Sw.
Aspidium dilatatum, Hook.
Aspidium marginale, Sw.
Aspidium noveboracense, Sw.
Aspidium spinulosum, Sw.
Aspidium Thelypteris, Sw.
Asplenium Ruta-muraria, L.
Asplenium filix-fœmina, Bernh.
Asplenium acrostichoides, Sw.
Botrychium Virginianum, Sw.
Botrychium ternatum, Sw.
Cystopteris fragilis, Bernh.
Cystopteris bulbifera, Bernh.
Dicksonia pilosiuscula, Willd.
Onoclea sensibilis, L.
Onoclea struthiopteris, Hoffm.
Ophioglossum vulgatum, L.
Osmunda cinnamomea, L.
Osmunda Claytoniana, L.
Osmunda regalis, L.
Pellea atropurpurea, Link.
Pellea gracilis, Hook.
Phegopteris Dryopteris, Fée.
Phegopteris connectilis (Mx) B. S. P.
Polypodium vulgare, L.
Pteris aquilina, L.
Woodsia Ilvensis, R. Brown.
Woodsia hyperborea, R. Brown.
Woodsia glabella, R. Brown.

For this list I am chiefly indebted to Mr. Lorenz, who has given special attention to the fern-flora of this locality.

The orchid-flora is scarcely less varied and interesting, including to my certain knowledge:

Microstylis ophioglossoides, Nutt.
Liparis liliifolia, Richard.
Corallorhiza (Nutt.), R. Br.
Corallorhiza odontorhiza, Nutt.
Spiranthes Romanzoffiana, Cham.
Spiranthes gracilis, Bigelow.
Goodyera pubescens, R. Br.
Habenaria tridentata, Hook.
Habenaria hyperborea, R. Br.
Habenaria dilatata, Gray.
Habenaria obtusata, Richardson.
Habenaria orbiculata, Torr.
Habenaria psychodes.
Cypripedium acaule, Ait.

The Microstylis is astonishingly abundant to us, who have been accustomed to encounter an isolated plant or two. Wherever we find a short, sparse grass, in shady places, not damp, but near water, there these plants grow by thousands. *Spiranthes Romanzoffiana* replaces our *S. cernua*, and is, if possible, more fragrant. The leaves of *S. gracilis* behave in a most peculiar manner. Remaining green and plump up to the time of flowering, they then begin to fade, at the tips first, exactly as though the moisture and nutrition were being sucked out of them by the stem, and in a very short time, entirely too short to be accounted for by ordinary decay, they have entirely disappeared. I mention this because, analogous to the behavior of the century plant, it is one of a number of instances which I have noted where the vegetative organs of plants at certain times and under certain conditions seemed to be utilized as food by the parent. Another point that interested me in the observation of this flower was the fact that its inflorescence is not, as stated in the books, 1-ranked. When seen in bud, it is as perfectly 3-ranked as is *S. cernua*, but upon the opening of its flowers it becomes in some way apparently 1-ranked. *Habenaria tridentata* is very scarce. *H. obtusata* grows thickly in the sphagnum, in deep shade, in company with *Moneses grandiflora*. *H. dilatata* I have before remarked upon as being here exceedingly fragrant, and entirely lacking fragrance in the White Mountains. It is a striking-looking plant, growing thickly, tall, strict and very slender, its pure white, dense flower-spike very bright among the tall grasses, rushes, and sedges of the bog. Occasionally a plant of *H. orbiculata* gets down in company with it, but this is usually confined to the bare ground under great trees, upon the hillsides. *H. hyperborea* is everywhere encountered in wet or damp places. It is almost as common as smart-weed is with us, and is probably the most variable plant of the region in shape and density of spike, size of plant, flowers, fruit and bracts, and outline and apex of leaves. Seeing the extreme forms one could scarcely consider them identical until he sees all the connecting links in the immediate vicinity.

Hedysarum is a very showy plant, securing a footing wherever a little earth collects upon the otherwise bare cliffs, and flowering profusely. The form of *Prunus Virginiana* here encountered is peculiar, with small, thin, narrow leaves, and small fruit, on a very small shrub. It reminds one much of the *P. demissa* of the West. *Saxifraga aizoides* and *S. oppositifolia* grow in the water that trickles over the bare cliffs, and the former is very showy. *S. aizoon* seeks such places as cactuses are fond of growing in, and closely resembles the small Mexican cotyledons. The *Aralia hispida* is a very small, rigid, smooth and narrow-leaved affair, owing probably to its high and exposed location. The *Maianthemum* also is a striking form, the leaves narrow, rigid, erect, rough, and the flowers few and small, on erect short pedicles. *Quercus rubra* is the only oak, and there are but few small specimens, in one locality. The same is true of *Pinus Strobus*. *Linnæa borealis* showed but a few late flowers on August 1st, these disposed to occur in threes. *Eupatorium perfoliatum* and *E. purpureum* both grew in small numbers and the plan's small, weak, with few leaves and contracted inflorescence. *Ribes rubrum*, as growing, looks strikingly different from the European red currant of the gardens. This has been remarked by many eminent collectors, but none has been able to find specific characteristics, nor can I do so. *Cassandra calyculate* and *Kalmia glauca* form the dense low shrubbery of bogs and margins of ponds. *Utricularia cornuta* grows almost uniformly with a single flower, never with more than two. The Actæas have greatly interested me. The two species are perfectly well distinguished by the thickened pedicels of the *alba*. But upon the flat, wooded, swampy summit of Mt. Willoughby, the other species produces with equal frequency the ordinary red, and a pure white fruit. To add to the interest, I have at Alder Lake, in the Catskills, been presented with a head of the fruit of alba, having, not a red, but a strongly crimson-purple color. The open, swampy meadows are filled with *Lobelia Kalmii*, *Parnassia Caroliniana*, and *Drosera rotundifolia*. The great abundance of *Campanula rotundifolia*, and the profusion, size and brilliancy of its flowers, excite the admiration of all guests at Willoughby, where they make the banks perfectly gorgeous. In all cases where Lycopodiums will flourish, we find two or more species contending for the soil, and the result is to impart a peculiar strength and freshness to the woodland walks.

THE HAIRS OF THE CHŒTOPHORACEÆ.[1]

In the *Journal de Botanique* for September, p. 321, M. J. Huber discusses the morphological and histological value of the hairs present in this family of algæ. He finds that the hairs are of two kinds. The first are true hairs and are nucleated organs; the second are setæ (*soies*) and are not nucleated organs, and consequently have not the histological value of a cell. The setæ are formed either by a simple outgrowth of the membrane of the cell or by an evagination of the more or less deep layers of the cytioplasm of the vegetative cells. The pluricellular hairs are found in *Stigeoclonium* and *Endoclonium*, with a few exceptions in which the hairs are unicellular. Unicellular hairs are found in *Herposteiron*, *Chætonema*, *Acrochæte*, and *Bolbocoleon*. In *Aphanochæte* the setæ are vaginate or sheathed, and in *Chætopeltis* the setæ are of a mucous character. The hairs and setæ usually terminate or replace the erect branches of the creeping thallus.—*Pharmaceutical Journal and Transactions*, Dec. 24, 1892.

Cement for Mortars.

J. R.—Melt together equal parts of gutta-percha and shellac in an iron vessel, on a sand bath. Apply a thin coat of the mass upon the strongly heated fractured surface; press forcibly together, and allow to cool.

Toothache Drops.

℞	Morph. acetate	1 grain.
	Oil peppermint	5 drops.
	Phenol	20 drops.
	Collodion	1 drachm.

Apply with cotton.

Tooth Paste.

Ch. M.—The following formula will probably give satisfaction:

Soft soap, P. B	5 ounces.
Glycerin	7 ounces.
Animal soap	15 grains.
Salicylic acid	20 grains.

Melt together, and add:

Precipitated chalk	25 ounces.
Powd. cuttlefish bone	1 ounce.

Perfume with:

Oil cassia	8 minims.
Oil cloves	10 minims.
Oil rose	10 minims.

If a rose-colored paste is desired, the above may be colored with carmine dissolved in a small quantity of caustic potash solution.

Hamburg Tea.

K. B.—Hamburg tea is said to be composed of:

	Parts.
Senna leaves (coarsely cut)	20
Coriander (crushed)	5
Manna (dried and cut)	10
Tartaric acid, powd	1

The senna leaves are moistened with tartaric acid dissolved in two parts of water, then dried and mixed with the rest.

Corn, Wart, and Bunion Cure.

Sherman R.—Try the following:

Gun cotton	200 grains.
Sulph. ether	12½ fluidounces.
Alcohol	3½ fluidounces.
Salicylic acid	2 oz. av.
Zinc chloride	1 oz. av.

Mix the ether and alcohol, and dissolve the gun cotton in the mixture. This will require a day or two. Then add the salicylic acid and, when it is dissolved, the chloride of zinc. Keep tightly stoppered and away from the light and flame.

Eau de Botot, Mouth-Wash.

A. M.—This is a preparation much used in France, and a good imitation is obtained by the following formula:

Tincture of cedar wood	1 pint.
Tincture of myrrh	¼ pint.
Tincture of rhatany	¼ pint.
Oil of peppermint	15 minims.
Oil of rose	10 minims.

Sozodont.

A. M.—A good tooth-wash, possessing at once fragrant and antiseptic properties, is:

Tincture soap-tree bark	2 fluidounces.
Tincture myrrh	1 fluidounce.
Glycerin	½ fluidounce.
Water	1½ fluidounces.
Essence cloves	10 minims.
Essence wintergreen	10 minims.
Tinct. cochineal	q. s.

Mix.

Cook's Electro-Magnetic Liniment.

This liniment is used for swellings, strains, etc. The formula is:

Alcohol	1 gallon.
Oil amber	8 ounces.
Gum camphor	8 ounces.
Castile soap	2 ounces.
Beef's gall	4 ounces.
Aqua ammonia	12 ounces.

Mix, and shake occasionally for twelve hours.

Artificial Extract of Vanilla.

R. V. D.—While it is impossible to imitate and duplicate exactly the vanilla aroma, the following gives a very close imitation:

℞ Balsam Peru	1 drachm.
Oil orange	⅛ fluidrachm.
Ext. orris	4 ounces.
Tonka beans, powd	2 ounces.
Tinct. castor	15 minims.
Cologne spirits	8 fluidounces
Carbonate magnesia	3 drachms.
Water	4 fluidounces.

Dissolve the balsam and oil in two ounces of spirits, and rub with the magnesia; add the balance of the ingredients, and let stand in a warm place for four weeks, and color with caramel.

Parrish's Laxative Pills.

Cas. Sag.—They are said to be composed of the following:

Powd. soc. aloes	2 scruples.
Powd. rhubarb	4 scruples.
Oil caraway	12 minims.
Ext. gentian	2 scruples.

Make into 40 pills. Dose: Two before dinner.

Garlande des Volontaires (Volunteer's Garlana).

Fred Guay.—The Parisian perfumers sell a vast deal of this, and it is said to give great satisfaction as an agreeable and persistent perfume:

℞ Otto neroli	¼ fluidounce.
Otto rose	¼ fluidounce.
Otto lavender	¼ fluidounce.
Otto bergamot	¼ fluidounce,
Otto cloves	8 minims.
Ext. orris	1 pint.
Ext. jasmine	¼ pint.
Ext. cassia	¼ pint.
Ext. musk	2½ fluidounces.
Ext. ambergris	2½ fluidounces.
Cologne spirits	1 pint.

Holland Gin.

R. V.—A cheap gin may be made as follows:

℞ Diluted alcohol	40 gallons.
Spirits nitre	2 ounces.
Loaf sugar	4 pounds.
Oil juniper	1 ounce.
Oil caraway	⅛ onnce.
Alcohol, 94 per cent	1 quart.

Dissolve the oils in the alcohol; add to the remaining liquids, dissolve the sugar in the mixture. After two days filter if necessary, and it is then ready for use.

Mother's Cordial.

R. T.—This syrup is also known under the name of Syrup of Partridge-berry comp. Its composition is as follows:

Partridge-berry herb	8 ounces.
Helonias	2 ounces.
Blue cohosh	2 ounces.
Cranberry bark	2 ounces.
Water	6 pints.
Brandy (French)	2 pints.
Sugar	1 pound.

Macerate the herbs in the brandy for three days; express the tincture and reserve. Place the herbs in the water, and boil down to 2½ pints; strain; add the sugar, and, when dissolved, remove from the fire and add the reserved tincture. The dose is from one to two tablespoonfuls.

Fluid Lightning.

Val. Demore.—The composition of this remedy is as follows:

℞ Aconitine	1 grain.
Essential oil of mustard	1 fluidrachm.
Glycerin	1 fluidounce.
Alcohol	4 fluidounces.

Dissolve aconitine and essential oil of mustard in the alcohol, and add the glycerin last.

This is a powerful and valuable remedy for external application in severe headache, neuralgia, and all nervous pains. From its poisonous nature, the liniment should be cautiously used.

Brandreth's Pills.

M. F.—According to Dr. Hager's analysis these pills consist of:

Ext. May-apple	10 grains.
Pokeberry juice	30 grains.
Saffron	10 grains.
Powd. May-apple root	10 grains.
Powd. cloves	15 grains.
Oil peppermint	3 minins.

This should be made into a mass with powdered liquorice-root, and cut into 30 pills.

LONDON LETTER.

An English Botanist's Impressions of the Riviera—The Sale of Proprietary Medicines Containing Poisons: A Further Restriction—The Stability of Strychnine in the Animal Cadaver—A Poisonous Ptomaine in Tinned Fish—Dr. Lauder Brunton on Impurities and Mistakes.

As the year draws towards its close, public business of most kinds, but especially that of societies, associations, etc., becomes conspicuous by its absence, and interest in the affairs of the community at large falls to a very low ebb, while attention is more immediately given to personal enjoyment and the merry-making inseparable from the season.

The last meeting of the Pharmaceutical Society for the year was devoted to botany, the Curator, E. M. Holmes, discoursing pleasantly upon the flora of the Riviera. Curiously enough, one of the first plants which attracted attention was a native of North America, *Erigeron canadense*, which appeared to follow the railway from France through Switzerland into Italy. Another species, *E. mucronatum*, occurred so naturally along the hedgebanks that it looked like a native. Other objects seen from the railway cars were patches of white and yellow which turned out to be buckwheat in flower and Indian corn in fruit.

Of course plants were found to be quite common in Italy (*e.g.*, the sweet-scented *Cyclamen Europœum*) which are very rare in England. The green meadows to be seen here and there in Lombardy had scanty herbage compared with the rich pastures of our country, the grasses appearing to consist chiefly of a small *Setaria*.

The principal trees observed were the white mulberry, the olive of course, and fig trees, while in isolated groups plantations of numerous others were met with. Among shrubs were noticed *Smilax aspera*, *Asparagus acutifolius*, *Coraria myrtifolia* (the leaves of which have been found mixed with senna in France), *Daphne gnidium* (the bark of which is often met with in commerce under the name mezereon bark), *Juniperus oxycedrus*, and various species of *Euphorbia*.

Mr. Holmes devoted considerable time to the description of Mr. Hanbury's wonderful garden at La Mortala, where plants from almost every quarter of the globle are grown; only those exotic plants are cultivated which will stand exposure to the winter of the Riviera. They are derived from forty-three portions of the globe, and number at present over 3,000 species, of which 229 were in blossom (in the open air) at the time of Mr. Holmes' visit. Thomas Hanbury, it will be almost unnecessary to mention, is the brother of the late Daniel Hanbury (of the "Pharmacographia"), and it is in this Italian garden that the historic styrax tree grows from which the famous botanist first obtained in Europe a few drops of liquid storax.

From the sunlit summer atmosphere of the Riviera to that of the law courts, especially in London, is a far cry, not only literally but also metaphorically. Nevertheless one might almost venture to say that during the past month pharmacists have been more interested in what has been going on in the law courts than in the vegetation of sub-tropical climates, however beautiful the latter may be.

Of the two or three burning questions of the age, none has at various times received more attention than the bearings of the law affecting the sale of proprietary medicines containing poisons. It is an established principle, of course, that poisons—or at least such as are included in the two schedules of the Act—should only be sold by qualified pharmacists who (presumably at least) are alive to the responsibilities associated with the sale of powerful drugs.

Now proprietary medicines have hitherto escaped all control, and, whatever their nature, have been obtainable by the public on the sole condition of producing the price set upon them by the seller. Of late years the anomaly of this has begun to make itself felt, and steps have been taken to ascertain how far the law as it at present stands is competent to meet the difficulty.

Some months ago it was decided, in a case heard at Bow-street Police Court, that such proprietary medicines as contain poisons should be labeled "poison," and from that decision the corollary was drawn that the sale of these preparations by persons other than registered chemists and druggists was illegal. The grocers' associations—for of course it is the grocer who will lose the sale of the medicines if the corollary alluded to be proved sound law—resolved to fight the question in court, and hence the trade papers have been largely occupied by reports of a case raised to test the whole matter.

Without entering into the details of the case, it may be said that the grocers have so far been defeated; they intend to appeal to the High Court of Justice, but until the decision just obtained is overruled it is established that chemists and druggists have the sole right of selling poisonous proprietary medicines. This is therefore one of the most noteworthy cases of the year in pharmaceutical law.

The Neill poisoning case, referred to in the preceding letter, has been quite fertile in interesting questions. Besides that touched upon last month, another discussion has sprung up as to the chances of detecting strychnine in exhumed bodies after the lapse of a considerable time. Although sufficient evidence has been brought forward in the course of this discussion to establish the stability of the strychnine molecule, yet it has also been proved that when decomposition is advanced (but not complete) there is great difficulty in obtaining evidence of the presence of the alkaloid. It must be remembered that it is not easy to get rid of all organic matter without simultaneously decomposing the alkaloid; yet if there be organic substances present, it is tolerably certain that they will obscure the purely chromatic tests for strychnine. A number of cases are recorded in which animal bodies (devitalized by strychnine) have been allowed to undergo more or less complete putrefaction in bottles and other vessels; in the majority of instances the poison was detected in the remains, but this did not happen in every case. It is further stated that strychnine has never been found in human remains exhumed for analysis, even when there was no moral doubt as to death having been brought about by that alkaloid.

A curious and interesting case of poisoning by sardines has been reported by Dr. T. Stevenson, the well known Government Analyst and Lecturer on Medical Jurisprudence and Chemistry at "Guys'." Six fish from a fresh tin of sardines were eaten for breakfast by a young medical officer, who died in a little more than twenty-four hours with symptoms of poisoning—perspiration, vomiting, gastric distension, œdema of the extremities, etc.

The sardines examined by Dr. Stevenson had a peculiar but not offensive odor; some of them were intensely toxic, killing mice and other animals in a few hours. From four of the fish (weighing 2¼ ounces) an alkaloidal substance was extracted which weighed only 1 milligramme. About two-thirds of this quantity injected beneath the skin of a white rat caused its death in 4¼ hours. From half an ounce of stomach contents 3 milligrammes of an alkaloidal extract was obtained, about half of which ($\frac{1}{60}$ grain) killed a young white rat in about twenty-six hours. All the animals exhibited great feebleness and retching.

It is curious that, although Dr. Stevenson was unable to extract any poison from the liver of the patient, yet portions of that organ proved fatal to a rat and produced malignant œdema in a guinea-pig. At the same time careful experiments pointed to the conclusion that the toxicity of the fish was not due to bacteria.

"Impurities and Mistakes" formed the text of an entertaining and instructive lecture given the other evening by Dr. Lauder Brunton to the Chemists' Assistants' Association. He dealt very lightly with the subject of mistakes, citing as illustrative of those made by chemists a single case in which a Virginia pharmacist dispensed oil of cajeput for oil of cade, and cured a child of an eczema which had baffled all the doctor's skill!

In speaking of impurities, the lecturer expressed the opinion that the action of some remedies was due to their impurities, instancing the mercury oxide in grey powder and the bichloride of mercury in calomel. He was inclined to ascribe the headache following too free indulgence in alcohol to the presence of bodies belonging to the aromatic series.

In another section of the lecture Dr. Brunton spoke of the value of vivisection in physiological work, specially referring to Harvey's discovery of the circulation of the blood, and his own investigation of the action of amyl nitrite. The moral urged at the conclusion of the lecture was that pharmacists should clear up the nature of the chemical constituents of drugs and thus pave the way to more accurate pharmacological research.

BERLIN LETTER.

Looking Backward—A Summing up of the Pharmaceutical Results of 1892.

It is of course impossible, in looking back over the events of the year in the departments of science in which the pharmacist is directly interested, to do more than allude to the salient points that for one reason or another stand out in strongest prominence.

All that is done in the course of twelve months is not of enduring value. Since human efforts of all kinds are liable to miscarriage, and the deductions of the most careful workers to error, we cannot feel excessive astonisment at finding that the most promising discoveries of one year are overshadowed in the next, either by facts which seemed at first of less importance or by still more recent and brilliant results of scientific research. Yet in spite of this it is possible to distinguish those features in the scientific development of the year which seem most deserving of attention.

Undoubtedly the reappearance of cholera in Europe gave a great impetus to the investigation of disinfection and the most efficient means of insuring it. The powerful antiseptic properties of the higher homologues of phenol, especially of the cresols, were recognized long ago, but it was only comparatively recently that methods were devised of overcoming the difficulty presented by the insolubility of the compounds. During the past twelve months the different varieties of these solutions have attracted much attention, though it seems probable that finality has not yet been attained in this direction.

The class Antiseptica has received a number of additions from the laboratory of the synthetical chemist. By the interaction of oxychinoline and phenol sulphonic acid a body is obtained which was put forward under the name diaphterin, or oxychinaseptol, as a non-poisonous, soluble antiseptic. In 1-per-mille solution it killed the cholera bacillus in ten minutes.

It is noteworthy that several compounds have been added to the materia medica of the surgeon during 1892 which are not entirely organic in origin. This would seem to indicate that, after all, the fact is not altogether being lost sight of that the salts of inorganic bases possess characteristic properties having well-marked therapeutical value. Asaprol is a naphtol-sulphonate of calcium, soluble in water and free from poisonous action on the animal organism; it prevents the development of bacteria without being a powerful germicide.

Then another substance belonging to the same class is dermatol, in which the astringent and drying action of bismuth is combined with the antiseptic virtue of gallic acid. To its insolubility this compound probably owes its entire freedom from poisonous action, which qualifies it for unrestricted use even in the local treatment of tissues most sensitive to irritants. On the other hand, its action is necessarily only superficial, so that where a deep-seated septic process is to be combated other agents have to be employed. Here alumnol is in place. This compound is a naphtol-sulphonate of aluminium, readily soluble in water. Over the salts of most heavy metals it has the advantage of forming a soluble compound with excess of albumin, so that its action is penetrating and not confined (as is the case with silver nitrate, for example) to the surface merely. Another aluminium salt with an organic acidulous radical was called sozal.

Other evidences of an increased appreciation of the importance of the inorganic world as a source of remedial agents are afforded by the research which has been carried out on the salts of strontium and their therapeutical employment. The examination of these salts in a perfectly pure condition not only established their freedom from the toxic action previously ascribed to them, but also revealed manifold fields of usefulness for the bromide, lactate, etc. On a similar platform is the work establishing the applicability of manganese compounds in the place of iron for the treatment of anæmia and chlorosis.

The number of iodoform substitutes steadily increases—though, it may be parenthetically added, it is questionable whether the consumption of the older agent suffers much depreciation in consequence. The latest of these bodies (besides those of semi-inorganic nature mentioned above) is losophan, the fancy name for a tri-iodcresol produced by the action of iodine upon oxytoluic acid in the presence of an alkali. The constitution of the body is represented by the formula $C_6HI_3CH_3OH$, and it occurs as white acicular crystals soluble in ether, benzol, chloroform, and warmed fatty oils. Spirituous solutions or ointments have proved useful in various skin diseases.

Among newer analgesics, agathin and analgene are important. The former is described as salicyl-α methyl-phenyl-hydrazon, with the formula $C_6H_4OHCH=NNCH_3C_6H_5$. Its white scales have a greenish shade, are insoluble in water (hence tasteless), but soluble in alcohol and ether. In doses of 8 grains *ter in die* agathin has given such encouraging results in neuralgias and rheumatism as to stimulate high hopes of its future importance and usefulness.

Analgene has the formidable systematic name, ortho-oxyethylanamono-acetylamidochinoline; it bears the same relation to chinoline as phenacetin does to benzene. In 15-grain doses it has proved beneficial in the treatment of rheumatism.

The work of Dr. R. Koch and Professor Liebreich on the treatment of tuberculosis and the somewhat allied lupus, has borne fruit in so far as it is now generally recognized that the aim must be to produce local irritation, to stimulate the healthy tissues to throw off, as it were, the morbid processes. The latest remedy for lupus, based on this principle, is thiosinamine, or allyl-sulphocarbamid, prepared by the interaction of allyl-sulphocyanide (the principal constituent of oil of mustard) and ammonia. The crystalline product has the formula $CS\left\{\begin{matrix}NHC_3H_5\\NH_2\end{matrix}\right.$ and, being decomposed by water, has been used in ethereal solution for subcutaneous injection, with good results.

The exclusion of sugar from every form of diet used by the diabetic has always been a serious deprivation to a large number, and what may be termed medico-dietetics has been severely taxed to devise means of lightening this part of the burden of such sufferers. During the past year two new sweetening agents have been brought under notice which can be used by the diabetic without aggravating the symptoms of their disease. Dulcin is a product of synthesis having the systematic name para-phenetol-carbamide. The compound differs from phenacetin only in the substitution of an amido group for a methyl, and yet, while the latter is tasteless, this has a powerful sweetness. The other sugar substitute is called diabetin, and consists of the carbohydrate lævulose prepared for the first time in a pure crystalline form. Experiments so far made have shown that this sugar may be taken by diabetics without prejudicing their condition.

From pure lævulose we pass by a natural transition to the consideration of the work which has been done during 1892 upon the products of the vegetable world. And first may be mentioned the continuation, in the laboratory of Prof. Kobert, of the research on the constituents of ergot by Dr. A. Grünfeld. The practical outcome of this work was to show that the drug should be collected before the rye ripens. Further trials made with the drug at varying lengths of time after its collection showed that even in the unpowdered condition and when stored with the greatest precautions it gradually lost all its activity, owing to a process of oxidation. As a matter of fact, by the March following the harvest the drug had as a rule become almost inactive. The bearing of these investigations on the stocking of ergot in the pharmacy is obvious.

Reference must also be made to the study of the constituents of sarsaparilla by W. v. Schulz in the same institution. The principal features of this treatise have been already cited in these columns, so that it is unnecessary to more than just mention it as one of the most interesting contributions to the pharmacology of vegetable drugs. It is specially worthy of note that the physiological effect of the glucosides present in sarsaparilla was found to closely resemble that of mercury—another instance of the justification of old-time empirical medical usage by the revelations of modern science.

Somewhat analogous were the researches on the therapeutic activity of male-fern extract, made by Poulson and others. It will be remembered that the activity of the oleo-resin was shown to depend upon the proportion of amorphous filicic anhydride present, and it was further pointed out that this amorphous active constituent is readily converted into a crystalline inert body by the action of the air. The filicic anhydride is very poisonous if absorbed into the circulation, and hence the importance of avoiding the after use of oleaginous purgatives which favor its solution and assimilation.

Chemico-physiological and therapeutical investigations of the constituents of *Viburnum prunifolium* and *Fabiana imbricata* (pichi) were also carried out, which established the value of the one in uterine affections and of the other as a diuretic.

The glucosides of digitalis have been still occupying the attention of H. Kiliani, who details the method of preparing a definite preparation which can be administered in regulated doses with reasonable certainty of effect. The dose mentioned as suitable by the author is ¼ milligramme every two or three hours.

In conclusion, the researches of Drs. Curci and Miolati on the relationship of physiological action, among the elements, to their position in the periodic system, is worthy of mention. The work has not been carried very far, and must of course be approached with reserve, yet it does seem to indicate the existence of some analogy between the atomic weight of the elements and their action in the animal organism. The intensity of the physiological effect appears to be in inverse proportion to their atomic weight.

If further examination of this subject show it to have a sound and reliable basis, it will have a far-reaching effect upon the medicine of the future, inasmuch as it would reduce to very simple proportions the task of building up synthetically compounds to produce a certain definite therapeutical action.

NEW SOUTH WALES.

The practice of taking students over the various large factories is gaining in popularity in all branches of technical education. The students of the Sydney Technical College make periodical visits to large works connected with the various trades, and it is a noticeable feature that nowhere are they refused admittance if accompanied by the head of their department. The works of Messrs. Felton, Grimwade & Co. were visited by a party of students from the Melbourne College of Pharmacy recently, and the manager gave to the party a hearty welcome. These works are situated on the outskirts of Port Melbourne, North Victoria, and consist of an extensive plant for the manufacture of acids, phosphorus, and similar substances. The party witnessed the operations in full swing, and the college authorities placed on record their thanks to this firm for the information derived and the attention shown the visitors.

Exporters of eucalyptns oil have been cautioned by the London agents that the European market is being largely overstocked with inferior makes of eucalyptus oil, and that if the price is to be maintained greater care must be exercised in selecting only the finest oil for export. We are told that now we have to compete against France, America, Algeria, in the production of this oil, and in many places of Australia people seem to think more about the quantity of oil yielded by a leaf than the quality of the product. J. H. Maiden is entering the field again, and has made arrangements for samples of oil to be prepared with special care from all the varieties of eucalypti in this colony, and we hope that ere long the work of this gentleman in this direction will be in the hands of the readers of the BULLETIN OF PHARMACY.

Mr. Maiden is bringing out a new work on Australian botany entitled "A Bibliography of Australian Plants." In the preface of this work he is very severe on the pharmacists of this colony in neglecting to keep in the library of their society the works of prominent pharmacists and botanists of Europe, and complains that the current literature of the pharmaceutical world is conspicuous by its absence. He failed to find any German or French periodicals among the society's papers, and thinks we are sadly behind the times.

Of this there can be no doubt, that the pharmacists of Australasia are more shop-keepers than scientists, and that immediate attention to business has left most of them little time or inclination for research.

The second edition of "Prescribing and Treatment of the Diseases of Infants and Children," by Philip Musket, M.D., late of the Sydney Hospital, is having a great sale throughout the colonies, and many hundreds of copies have been sent both to England and America. Dr. Musket is to be congratulated upon the great success his work has gained.

The Melbourne College of Pharmacy has decided not to appoint the teaching staff of the College as assistants to the examiners or as co-examiners in their respective subjects. This has been discussed at some length throughout the Australias, and the general opinion among teachers seems to be that they ought to have a voice in examining the students under their charge. It is the practice at our universities to have the professors and lecturers as co-examiners in their respective subjects, and the result has been that the students display a greater amount of knowledge than when examined by those who are less familiar with the actual work done.

Splendid specimens of Fiji vanilla have been recently presented to the College of Pharmacy, Melbourne, by F. H. Longstaff, of Fiji.

The Minister for Public Instruction has been pleased to appoint two New South Welshmen—or "Cornstalks," as they are commonly termed—to the position of Examiners to the Department of Pharmacy of the Technical College. This is the first time in Colonial history that a native of this colony has been appointed to such a position, and these gentlemen have a good record of professional work. William Henry Burnett has been appointed Examiner in Pharmacy and Materia Medica, and Matthew Hargrave Examiner in Pharmaceutical Chemistry and Dispensing. This latter gentleman, after having received a careful professional training in Sydney, N. S. W., proceeded to London, and, after passing the major and minor examinations at Bloomsbury Square with honors, returned to this colony and opened up business in the fashionable suburb Manly Beach. Prior to his departure for Europe he passed the local examinations for license to sell poisons and M. P. S. N. S. W. W. H. Burnett was a student at the Technical College during the four years of his apprenticeship, and passed through the college with honors in the subjects in which he is now appointed examiner. After being some time chief dispenser to Frank Senior, chemist to the Governor, Mr. Burnett purchased the first pharmacy in Croydon, and is regarded as a rising pharmacist among us. It is thought that these appointments will give every satisfaction to the college officials.

Dr. J. F. Elliott, of Elliott Bros., has presented to the Technological Museum a choice collection of the various eucalyptus oils commonly met with in commerce. Care has been taken in these specimens to make them as typical as possible. J. H. Maiden, in whose charge these specimens are placed, has announced his intention of entering upon a thorough investigation on the nature and composition of these oils as soon as the laboratory, which is now in course of erection in connection with the Technological Museum, is completed.

Recent shipments of oil of lemongrass which have arrived in Sydney have been found to be extensively adulterated with kerosene oil, and an enterprising firm of American agents have been extensively advertising a new kerosene oil, non-explosive and highly illuminating, colored a pale pink color with alkanet root. Examination of this oil has proved it to possess no peculiar features except that, in spite of all the efforts of the importers to make it permanently retain the tint imparted to it by the alkanet root, the said tint has so far proved itself rebelliously unstable. Armed with a fancy name, a fancy color, and no ordinary amount of impudence, these enterprising Americans hoped to drive other makes of oil out of the market.

This same firm has employed a German chemist to analyze the commonest and most popular of the proprietary medicines placed in the Australasian markets, and hopes to form a company which shall flood the world with proprietaries similar to those which have already won a name for themselves. As yet the idea seems to make but little headway, and folks this side are hesitating about putting their money into the venture. Our readers, however, may soon find that "The Great Australian Remedies" are vigorously advertised, and when this comes about it may interest them to known what was the real origin of the enterprise.

It has been decided by the Council of the Pharmaceutical Society that on no account shall students be admitted to their final examination until they have attained the age of 21 years. This is by many regarded as a hardship, and it is probable that when any new legislation is enacted the age will be declared by statute to be 18 years.

By the recent decease of Bozon F. Bozon the trade in this colony has lost one of its oldest pharmacists. Mr. Bozon belonged to the good old times of the colony when competition was less keen and prices were higher. He made his fortune comparatively early in life, and of late years had severed his connection with the trade. During his term of office as Examiner in Pharmacy to the Board of Pharmacy he was noted for the length of the papers which he was in the habit of setting, and the thoroughness with which he compelled the students to do their work.

Experiments on the black-leg disease in horses, and inoculation against the same, have recently been undertaken by M. Pasteur's agents. The experiments were tried in the New England District, and proved a complete failure.

The dental profession in Australia is making rapid progress. In Victoria the Dental Act is giving every satisfaction and the Dental Association is in vigorous operation, while the Dental Board and the Melbourne Dental Hospital are doing good work. In Sydney there is an excellent Dental Association, and the Council is making all preparation to move in the Legislative Assembly for an act to protect the public from unqualified practitioners. Socially the dentists rank high in the scale of professional men in this colony, and from the progress made in their Association we fear that pharmacists will have to take a very second-rate place unless they stir themselves.

The Medical Adviser to the Government has expressed himself very strongly against compulsory apprenticeship among druggists. Dr. Manning says that he considers apprenticeship in medicine and allied subjects as belonging to a bygone age and not suited to the requirements of this country in these days of technical education.

Sydney, N. S. W., December, 1892.

NEW YORK LETTER.

Business since the writing of my last letter has been absolutely dead. There is no inquiry, and the few slight transactions that have been put through during the past few weeks have been under pressure and accomplished with difficulty. In my last I reported that the inventory season had up to that time had little or no effect upon business; but such condition did not long continue, as the closing week of the year, and the month of January up to the time of this writing, have indicated a most disastrous condition of things, so far as stagnation in trade is concerned. Immense stocks of everything are coming forward and being piled away in the warehouses of New York merchants, while the inquiries for distribution throughout the interior are very limited and very seldom received.

Opium has maintained a very steady and firm front. Considerable sales have been made, and a constant effort has been made to sustain present prices. In this the holders have been somewhat successful, although reports now reach us from Smyrna of a character that would indicate that before another month a very serious decline will again take place in the value of this important drug, for, while the market sustains itself here well, it has materially fallen abroad. Naturally, in the face of lower prices at the point of origin, advanced prices cannot be sustained here.

Morphine has held its own, there being thus far no disposition on the part of manufacturers to lower their prices; but if during this next month opium again falls, as we believe it will, morphia will have to follow suit.

Quinine has been absolutely neglected and ruling very weak, having dropped off fully a cent an ounce, and in some cases 1½ cents an ounce, during the past two weeks. There is really no demand for it, and the exception is when a case of any important brand of imported German quinine can be sold in a single invoice. It is expected on the part of all that the coming of spring and the usual very heavy spring demand for quinine will enable holders to advance prices again and come out whole. In all probability this will be the case, as, from all we can learn, the present price of quinine is not as high as the present market price of barks would warrant.

Asafœtida, in the better grades, has slightly weakened, but for the lower London grades the price has slightly advanced. Little or no demand exists, so that it is difficult to know what action will be taken in case an active demand should suddenly spring up. We would, however, say in a general way that the market is weak.

Buchu Leaves.—Large sales have been made during the past week or two at very heavy prices. The most important holder in the New York market has entirely sold out. A few bales are still left scattered, for which high prices are asked. It is, however, exceedingly doubtful whether a single bale of strictly prime buchu could be found in original hands in this city.

Ergot.—It is a little difficult to know what the near future will develop in the price of this article. Some seem to think that the amount held abroad is exceedingly small; others report that it is very large. So far, at least, as our market is concerned, there seems an abundance of it, so that, although there has been a desperate effort made on the part of certain speculators to advance the market price, it has been up-hill work. Our own judgment is that there is an abundance of ergot to last until the new crop can be harvested, and we are not anticipating any marked advance. Nothing could prompt an advance, unless it should be a sudden heavy demand. This, however, cannot take place if large buyers will act with a little caution and withhold their present orders, in which case, as the stock is abundant, speculators would find it a very difficult thing to advance their values.

Jaborandi Leaves.—The stock of these leaves became entirely exhausted in this market, so that as high as 80 cts. per lb. was asked during the past month. It seems, however, that the cause was that the Southern ports from which these leaves are shipped were closed because of the cholera scare. As soon, however, as the embargo was raised, supplies began to move forward. Sixty-eight bales are reported as having arrived in London, and it has had the effect to very greatly reduce the value of the article here, so that it can to-day be bought for one-eighth the price demanded for it a month ago.

Coca leaves remain exceedingly scarce and high. There is no prospect of relief. The strongest possible advices are received from Peru and Chili, indicating short supplies and high prices.

Menthol has advanced an additional half-dollar per lb. The reports that reached us some little time ago, to the effect that the supply of oil was exceedingly scarce and the price of ice high at Yokohama, so that the production of menthol was made exceedingly difficult, have now been fully confirmed. There is no prospect of any lower prices, but higher prices are most confidently looked forward to. All users of menthol or menthol preparations should lay in abundant supplies to meet their present necessities.

Spanish saffron is again firmer than when my last letter was written. An advance corresponding to about one half-dollar per lb. has taken place.

Norwegian Cod-Liver Oil.—The demand has been exceedingly light, and it is met without difficulty, but no actual change in value has taken place.

Jalap.—Little or no demand has occurred. The root is, however, very scarce, supplies coming in very lightly, and European demand being greater than that for this market. The root is sold as fast as it arrives, giving no chance for accumulation.

Gum Arabics.—Specimens of the genuine Kordofan gum have been seen by the writer. This is the first time for many years that any direct supplies have reached this country from that section. It is known that in inner Africa enormous supplies await the opening up of transportation. As soon as the river is free, without question it will begin to come down, and must very seriously affect the price of all gums that have for past years been selling as substitutes for the Kordofan arabic. During this period, however, the Senegal gum has become a favorite, having proved itself in every way equal to the Kordofan gum; it will be difficult, therefore, to remove it from its place.

Sarsaparilla, Mexican, sells as fast as it arrives for export. There has been no accumulation, and prices remain high.

Camphor.—Although the market is very dull and demand slight, the recent advance is fully maintained, and we are informed that there is no prospect of lower prices.

Chamomile Flowers, German.—The supply of nice German flowers is exceedingly light, and in fact there is no very large supply of any sort. Therefore holders are able to continue to receive the full range of prices that has been maintained during the past few weeks.

New York City, Jan. 11, 1893.

CHICAGO LETTER.

The atmosphere in drug circles in Chicago has recently become considerably disturbed by some newspaper articles attacking the efforts made by pharmacists to protect themselves by combination against the destruction of their profits in the drug business.

Like the usual newspaper writers' comment on subjects about which they are ill informed, these articles display the grossest ignorance of the conditions now existing in the practice of pharmacy, and are manifestly inspired by those who would undermine the only safe means of dispensing medicine through the competent pharmacist, and would expose the public to the dangers of grocers, bazaar stores, and liquor dealers selling toxic medicaments, and often of inferior quality, over the counter, with no knowledge of their quality or purity.

Our Chicago correspondent gives us a graphic description of the "bull in the china shop" methods of those inspired articles so harmful to public health interests and maliciously reflecting on the members of the pharmaceutical profession as robbers. The animus of such attacks is obvious.

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As Julius Cæsar used to say: "*Difficile est satyram non scribere.*" The whole thing would be a farce, if it was not a tragedy. For years things have gone along and the druggists have paid no attention to bazaar-store cutting; but recently all has been changed. A cut-store has been opened as a full fledged drug store, and instead of the bargain counter this drug store has a full $500 license to sell liquor by the drink. The proprietor and manager is not a druggist, but advertises heavily. You may imagine the rest, when you read in his "ad" that "Fairfield's Pepsin" is being sold at $1.25 by retailers. No honest druggist in the world offers Fairfield's pepsin essence, while Fairchild's essence is sold everywhere at $1.00. Add to that, such unheard-of names as Marshfield's and McKenzie's sarsaparillas, and you can estimate the nature of the beast. Of course such competition must be aggravating to decent neighboring business men, and the result is they have met such competitor's prices. Whether this is prudent or not, who can judge? The writer stood Fair and unfair competition for eighteen years—on one side the slaughter pen, on the other a grand mogul who made a gullible public believe that his products were the only pure ones in Chicago; in fact, his linseed-meal, even, was of the infallible Squibb brand. And in another instance a saloon druggist offered, by the aid of glaring placards, "Dr. Discord's sarsaparilla" at sixty-five cents. The writer pegged away; he has not been over-successful, yet pays his bills, supports his family, but has not got to that point where he could run a lithographic palace exhibit for fun, or run a minstrel show just to kill long winter evenings, but fairly well successful in not even being compelled to resort to a failure, or a fire sale even. Yet the war has begun now, and it looks as if, at least in the down-town district, it would be carried to a climax! First against an unfair, non-druggist saloon, then everybody against everybody, and the result will be to the discredit of Chicago's fair name. The down-town druggists will attack the hundreds in the outskirts, and the outskirts will attack the down-towners, and not to the benefit of the public. Druggist No. 1 will come out in a five-foot board: "Here is the only genuine cow-mist-fog. The discoverer of this new process has lain awake for fifty years, and then in a Leap Year New Year's night—he got it. All the rest are imitations." Druggist No. 2 will come out with a ten-foot bill board: "We fill over 500 prescriptions per hour; work our prescription department by steam, electricity, hot and cold water." No. 3 puts up a fifteen-foot barber pole and shouts: "Our prescription clerks are all graduates of five colleges, and examined by seven boards. The rest are all fakes." No. 4 will cover the whole building with canvas-signs: "This is the only place where pure drugs and chemicals can be found. The corporation has made contract with all manufacturers to furnish all the rest of druggists impure medicines." No. 5 has a big search-light sign: "Chicago does not want pure medicines; it is after cheap stuff.

Come hither; this is the only place where you get a dollar bottle for 5 cents and a three-year's paid-up life insurance policy of the Sandwich Mutual Admiration Company." No. 6 has a runner at all depots: "This way, gentlemen! We sell you sugar-of-milk five per cent. below barrel price and with three barrels Hahnemann's Guide to Health thrown in, and you can make all your triturations and potencies yourself without paying highway robbery prices to Fairfield & Co."

The last sign found is: "Citizens of Chicago: I am a Jim Dandy; nothing but elegant pharmacy on tap here; our manager commands a salary of $5,000, and our chief cork $3,000. This is the only pharmacy with a $25,000 fountain. We paid $5,000 for our sideboard. We are in telegraphic connection with all the famous book-makers; you can bet on anything you want to, as long as the bet is good old bluff; paying bets is a back number with us. Our beef bouillon is made from the fresh hog, conducted from the stock yards in lead pipes. We have the cinch on everything."

So far the burlesque! In reality the press of Chicago is hard at work to inflame the people against an honorable class of business men, and particularly the *Times* abounds in exaggerations and contortions. Newspaper reporters very seldom report anything half-way correct, but in this instance the journal founded by Wilbur F. Storey went out of its way to make people believe that an imaginary trust had dictated to jobbers not to sell physicians any chemicals, etc. In fact, for three days that paper has not said a thing about druggists that was in correspondence with facts and truth, and it reads like a paid advertisement for a pirate druggist.

That this should happen just at the moment when the A. P. A. plan was about to be completed is very deplorable; but it may be just as well to have it out right now. The druggists in the city are not very jubilant over the stand taken by our jobbers, but let it come —now as well as later! The druggists know that Palmer and Wright *have de facto* managed to confine their goods to druggists; and it is but natural to think, if these two men can accomplish this, why not others, or all? Why not try the manufacturers direct? We have asked the jobbers. Here we are! In my estimation, it is written on the wall that in the near future the retail druggist will have to rely for protection on the manufacturers; and then the case is plain: You, Mr. Manufacturer, may sell us, provided you protect us; if not, your goods are fired out. This will eventually apply to proprietary medicines, pharmaceuticals, chemicals, etc., and then the jobbers will find time to meditate upon the question of sticking by the trade that supports them.

In conclusion, let me express the hope that our druggists will not lose their heads. History is our best teacher. We had in the past only three cutting druggists—one failed, the other went where the woodbine twineth, and the third died.

Chicago has only a few successful druggists, and these few did not make it a point to cater to popularity by cheap prices. On the contrary, they are the highest-priced pharmacists in town. People are after first-class medicines, and are ready to believe cheap medicines not only cheap in price, but in quality. Let the druggists keep a stiff upper lip, and the distinguished cutter will take his choice of one of the above three historical examples.

P. S.—Even the outskirt small-fry druggists have started to cut.

IMPORTS OF DRUGS, ETC., AT THE PORT OF NEW YORK, FOR THE MONTH OF DECEMBER, 1892.

Anise seed, 125 bales, 594 bags.

Alizarin, 130 packages, 47 bbls., 240 casks.

Aconite, 8 bales; aconite-herb, 1 bale.

Anagallis, 1 bale.

Ammonia, 35 casks; muriate of ammonia, 50 casks; carbonate of ammonia, 108 casks, 35 kegs; ammonia alkali, 382 casks; sal ammoniac, 20 casks; sulphate of ammonia, 2,231 bags.

Alum, 90 casks.

Aërated water, 110 bbls., 150 cases.

Aloes, 283 cases, 70 boxes, 16 kegs.

Aluminium sulphate, 61 drums.

Arrowroot, 100 tins.

Arsenic, 1,600 bbls., 1,084 casks.

Acetic acid, 20 cases.

Arnica, 5 bales.

Antimony salt, 24 casks.

Asafœtida, 245 cases.

Acid, 10 casks, 137 packages.

Albumin, 139 cases, 25 casks; blood albumin, 62 cases.

Albuminated paper, 1 cask.

Alkali, 24 tierces, 100 kegs.

Anilin, crude, 20 drums; anilin oil, 75 drums, 10 bbls., 3 casks; anilin salt, 642 cases, 246 casks, 65 bbls., 26 packages.

Bark, 115 bales, 25 bbls., 14 cases.

Balata, 5 bales.

Balsam copaiba, 7 boxes, 29 cases, 7 bbls.

Belladonna, 2 bales.

Borax, 8,617 bags.

Buchu leaves, 4 bales.

Bitumen, 4 casks.

Barium binoxide, 20 cases; barium carbonate, 100 tons, 420 casks.

Chemicals, 715 casks, 393 cases, 67 packages, 47 bbls., 19 sacks.

Cod-liver oil, 230 bbls.

Colocynth, 36 cases; colocynth apples, 8 boxes.

Capsicum, 656 bags.

Calamus, 5 bales.

Cardamoms, 7 cases; cardamom seed, 2 cases.

Convallaria, 29 cases.

Cologne water, 1 case.

Cacao butter, 166 cases, 84 bags, 26 bales.

Cubebs, 122 bags.

Creolin, 50 cases, 80 demijohns.

Coriander, 71 bags.

Chamomiles, 11 casks, 25 bales.

Colchicum root, 16 bales, 11 cases.

Camphor, 607 tubs, 11 cases.

Cherry-laurel water, 10 packages.

Cardus benedictus, 17 bales.

Caulis, 5 bags.

Cantharides, 19 cases.

Capsules, 2 cases.

Crystal carbonate, 700 bbls.

Carbolic acid crystals, 59 packages; solid carbolic acid, 15 casks; liquid carbolic acid, 1 box.

Cassia, 634 packages, 3,332 bundles; cassia lignea, 100 cases; cassia vera, 147 packages; cassia oil, 1 case.

Cuttlefish bones, 62 straps, 11 packages.

Castor seed, 3,723 bags; castor oil, 501 cases.

Chamædryos, 1 bale.

Carboleum, 50 tubs.

Chalk, precipitated, 12 casks.

Chlorsanes kali, 2 cases.

Chloride of lime, 87 tierces, 139 casks, 90 drums.

Drugs, 99 bales, 4 casks, 120 cases, 154 packages, 7 bags, 2 boxes.

Druggists' sundries, 56 cases.

Dosetrene, 20 sacks.

Dragon's-blood, 31 cases.

Eau de Cologne, 2 cases.

Essential oil, 85 cases, 3 half-cases, 76 quarter-cases.

Ether, 2 cases.

Elder water, 1 package.

Fuller's earth, 6,228 bags, 370 sacks.

Fennel, 5 bales; fennel seed, 15 bales, 55 bags.

Flower water, 29 cases.

Gum tragacanth, 20 cases.

Gum myrrh, 5 bbls.

Galls, 123 bags.

Glycerin, 258 casks, 638 drums, 48 cases, 27 packages, 10 bbls.; crude glycerin, 112 bbls.

Gentian roots, 48 bales.

Horehound leaves, 20 bales.

Haarlem oil, 76 cases.

Horsefoot herb, 2 bales.

Herbs, 30 packages, 16 cases, 3 hampers, 2 bags, 160 bales; roots and herbs, 1 bale, 13 sacks.

Hop meal, 2 cases.

Iodine, 346 bbls.

Insect flowers, 78 bales.

Jalap, 16 bags, 18 bales.

Juniper berries, 250 bales.

Liquorice, 25 cases; liquorice wood, 282 bales, 17 cases; liquorice root, 9,979 bales, 100 bags, 153 boxes; liquorice paste, 50 cases; liquorice extract, 100 packages.

Leaves, 225 bales; dried leaves, 87 bales.

Levisticum, 2 bales.

Leeches, 6 packages.

Lavender water, 1 case; lavender flowers, 23 bales; lavender extract, 15 cases.

Lily-of-the-valley, 1 case.

Lichen, 15 bales.

Laurel leaves, 50 bales.

Malt extract, 22 cases.

Myrbane, 2 drums; myrbane oil, 20 cases, 2 drums.

Magnesia, 95 cases, 2 crates, 104 casks.

Medicines, 1 cask, 34 cases.

Moss, 8 bales.

Milk powder, 340 cases.

Menthol, 13 cases.

Marjoram leaves, 15 bales.

Maresque water, 2 packages.

Nux vomica, 3,370 bags, 800 pockets.

Naphthalin, 80 bags, 33 kegs.

Nut galls, 62 bags.

Natrium, 151 casks.

Oxygen, 91 cylinders.

Opium, 130 cases; opium seed, 1 case.

Oxide of zinc, 5 casks, 10 cases, 200 bbls.

Orange water, 101 packages.

Orris root, 34 bales, 13 casks.

Oxalic acid, 50 casks.

Poppy herb, 4 casks, 2 cases.

Potash, 85 bbls., 278 casks, 103 cases, 107 drums, 300 kegs; carbonate of potash, 50 casks, 50 bbls.; caustic potash, 45 drums; bichromate of potash, 45 casks; chlorate of potash, 472 kegs; sulphate of potash, 9,522 bags; muriate of potash, 14,765 bags.

Phosphate, 8,500 bags, 2 boxes; phosphate of lime, 5 casks; phosphoric acid, 15 cases; phosphorous acid, 26 cases.

Pharmaceutical products, 61 cases.

Petroselinum, 1 bale.

Pulsatilla, 4 bales.

Perfumery, 213 packages, 124 cases, 1 box.

Quinine, 128 cases.

Rapeseed oil, 186 bbls.

Rhubarb, 37 cases.

Roots, 603 bales, 24 cases, 30 bags, 3 casks, 8 packages.

Rose-water, 75 packages, 44 cases, 100 demijohns.

Sponges, 2,818 bales, 15 bags, 166 cases, 40 packages, 127 bbls.; refuse sponges, 8 bales.

Sarsaparilla, 550 bales.

Soda, 321 bbls., 18 drums, 1 case; soda salts, 72 casks, 40 drums; bichromate of soda, 90 casks; hyposulphite of soda, 40 casks; sulphide of sodium, 145 bbls.; soda crystals, 2,656 casks, 140 bbls.; nitrate of soda, 8,119 bags, 15 casks, 14,715 sacks; chlorate of soda, 500 kegs; silicate of soda, 105 bbls.; sal soda, 20 casks.

Snake root, 1 bundle.

Salvia, 50 bales.

Seeds and roots, 14 bags, 18 bales.

Smelling salts, 1 case.

Stramonium, 47 bales.

Skeletons, 5 cases.

Sweet oil, 7 packages, 1 cask.

Saffron, 1 package, 5 cases.

Senna, 167 bales.

Thistle herb, 1 bale.

Tartar, 741 bbls., 104 casks, 68 packages, 363 sacks, 105 bags.

Tinctorial extract, 10 casks, 5 bbls.

Toludine oil, 5 drums.

Taraxacum, 24 bales.

Triticum repens, 167 bales.

Uva ursi, 20 bales.

Valerian, 46 bales; valerianic acid, 10 cases.

Veronica, 1 bale.

Vegetables, roots, drugs, etc., 33 packages.

CURE FOR CHILBLAINS.

The Würtemberg Government has issued the following formula for chilblains:

Mutton tallow and lard, of each ¾ pound av.; melt in an iron vessel, and add hydrated oxide of iron 2 ounces, stirring continually with an iron spoon, until the mass is of a uniform black color; then let it cool and add Venice turpentine 2 ounces, Armenian bole 1 ounce, oil of bergamot 1 drachm. Rub up the bole with a little olive oil before putting it in.

Apply several times daily by putting it upon lint or linen.

[WRITTEN FOR THE BULLETIN OF PHARMACY.]

LOVE'S SACRIFICE.

"O will you, Mary, marry me?"
Said Philip Groskopf, Ph. G.
"No, I will never," Mary said,
"Wed any man with *such* a head.

"Once you was meek, my mother says,
As Moses in the bulrushes;
But now a microscope can't show
The little that you do not know."

"Unknown to me," said Philip G.,
"Is one domain of mystery;
The ways of woman, I'll be bound,
Within no text-book can be found.

"But listen, if you'll marry me,
You shall be Mrs. Ph. G.,
And all the girls will say, 'O my!
She holds *her* head extremely high!'"

"On one condition," Mary said:
"K-o-p-f, high Dutch for 'head,'
Is more than I can tolerate;
And 'Ph. G.' is yours by fate.

"Cut off the stringers to your kite;
To Mr. Gross I will unite,
And Mrs. Ph. G. I'll be,
No thanks to the University."

And Philip, mastered by her charms,
Said: "Fame, begone! Come to my arms!
The Legislature shall announce
That 'kopf,' etc., 's got the bounce."

—KOSMO LEAN.

THE RIDDLE EXPLAINED.

"Talk about restricting immigration. Why don't the authorities be consistent and practice what they preach?"

"Well, they do restrict immigration. Don't they make preachers pay $1,000 for the privilege of coming over from Canada? and don't they shut out paupers and Chinamen?"

"Yes, and they're pretty tough on the Eyetalians, but what I can't understand is the extraordinary invitations they extend to the Irish."

"What do you mean?"

"Why, this: that you can't pick up a new churn, a washing-machine, an egg-beater, a carpet-duster, a buck-saw, or anything indeed that belongs to the inventive genius of the nineteenth century, and is moreover under the control of this Government, without finding stamped on it: 'Pat applied for,' just as if nobody but an Irishman could handle any of their labor-saving devices. It's a perfect shame."

ONE ON THE DOCTOR.

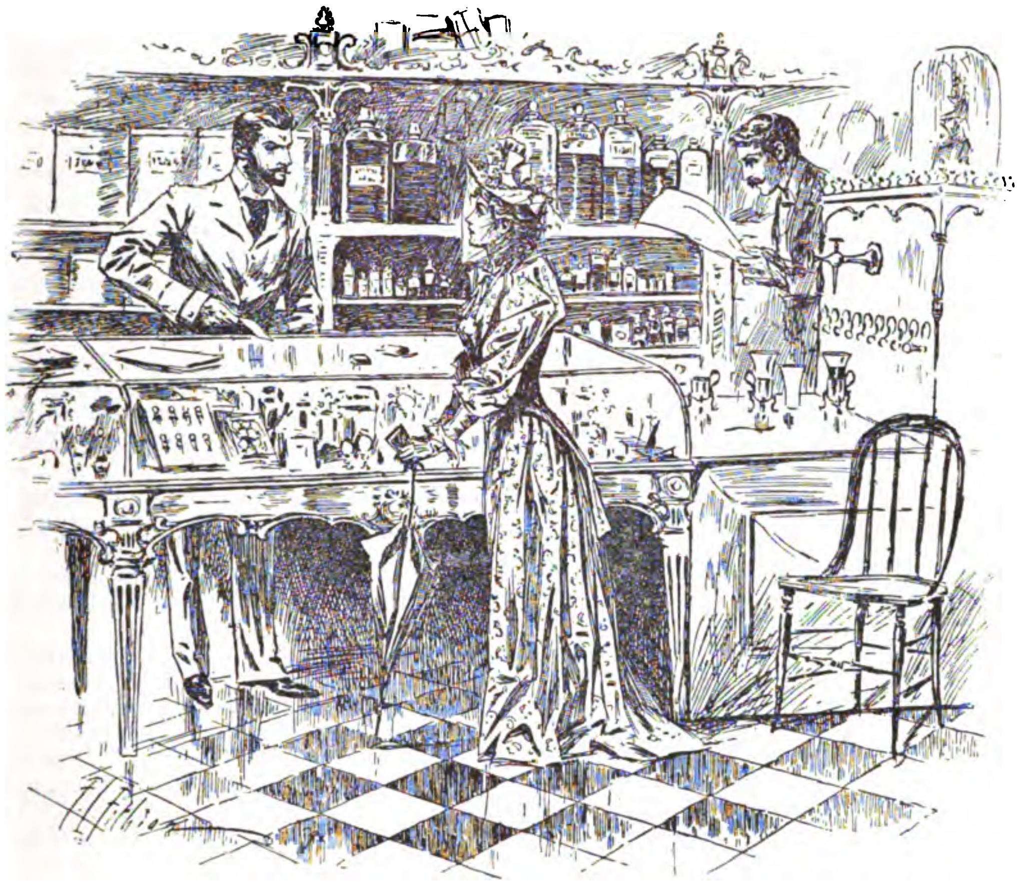
Mrs. Gooseberry—"De chile done gone an' swollered 'r bottle 'r ink."

Dr. Giglamps (newly graduated)—"Ink—plain, ordinary ink? Humph! This is easy. Oxalic acid will remove ink immediately. I'll write you a prescription for it.—*Puck.*

THE PHARMACIST'S NIGHT-BELL.

Oh! the bell, bell, bell! hear the clanging of the bell!
How it fills me with affright
In the stillness of the night
When I hear the clanging, banging of the bell, bell, bell!
Oh! the times without nnmber
I am waked from out my slumber
By the clashing and the dashing of the bell, bell, bell!
How it grates upon by ear
When its brazen notes I hear
As between the sheets I listen to the bell, bell, bell!
Ringing out from time to time
With an intermittent rhyme,
Till my heart with anger swells,
And I wish there were no bells
To disturb my peaceful resting
Or to give my nerves a testing
With their loud and ceaseless clanging,
With their irritating banging
And the sleep-disturbing noising of the bell, bell, bell.
Oh! why were bells invented?
I'd have lived and died contented
Had I never been awakened by the bell, bell, bell,
In the midst of pleasant dreaming—
By the tantalizing screaming,
The tympanum-splitting clanging of the bell, bell, bell.
So whether won't or will,
In my shirt and *deshabille*,
Whilst its brazen tongue is quivering,
And my legs are cold and shivering,
I must leave my bed and answer to the bell, bell, bell.
Oh! when the frame is weary,
And the eyes are tired and bleary,
I am tempted hard to grumble,
When for matches long I fumble,
And in slippers, shirt, and candle,
See who's pulling at the handle—
Find my toil of little use,
For a very poor excuse
May have caused the noisy clamor of the bell, bell, bell.

—*Chemist and Druggist.*



KNOCKED OUT.

ENTERPRISING DRUGGIST—"Here's a card, madam. Each time you buy something I'll punch it. When two dollars are punched you get five soda-water tickets free."

MADAM—"That's a fine idea. I'll take two dollars' worth of postage stamps now."—*Judge*.

[WRITTEN FOR THE BULLETIN OF PHARMACY.]

A CHECK TO YOUTHFUL ADVENTURE.

Said a micrococcus to his Ma:
"How very much retired we are!
Did you ever notice that?
This humdrum life I can't endure—
One might as well live in a sewer
Or in a city flat.

"Our minds so narrow have become,
Our tastes so indolent, by gum!
We've retrogressive proven.
Although we have a Latin name,
Unknown we'll ever be to fame
Unless we get a move on.

"So forth I go through climates cold
To see the world. O, you may scold—
I'll go indeed, that will I."
The patient mother checked a sigh,
And said, with serum in her eye:
"My son, now don't bacilli!"

—K. L. (for short).

OSCULO THERAPEUTICS.

Tell me not in scientific
Pages, such a tale as this,
That diseases most terrific
Gain diffusion by a kiss.

Kissing's real, ah! kissing's earnest;
Though the vile bacillus lurk
In the kiss that thou returnest,
Trust me, Damon will not shirk.

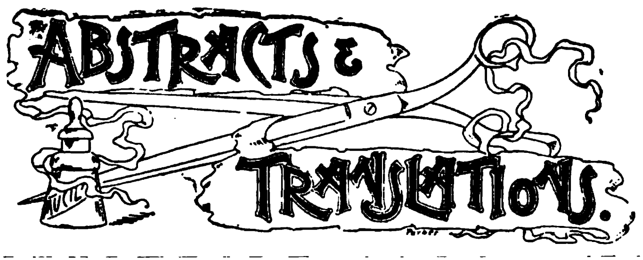
Vain the doctor's adjuration,
Phyllis lightly to me trips:
If there's death in osculation
Let me take it from her lips.

When a merry maiden fair is,
Medical advice decline;
Let her sweet *orbicularis*
Oris lightly rest on thine.

Yes, since kissing surely pleases,
We, by Æsculapian art,
Can prognosticate diseases—
Soft affections of the heart.

Kissing is by nature taught us;
Kiss the girls, then, when they come,
Tho' a kiss be, *vide* Plautus,
Acherontis pabulum.

—*St. James Gazette—Meyer Bros.' Druggist, August, 1892.*


ABSTRACTS & TRANSLATIONS.

Limes and Lime Trees in the Leeward Islands.[*]

The date of the introduction of the lime tree into these island is a matter of conjecture. So far back as 1791 it is recorded that large quantities of the fruit of this tree were exported from Dominica to England and America. It was not, however, until about the year 1850 that the systematic cultivation of the tree began by Dr. Imray in Dominica, and quite independently by the Messrs. Sturge in Montserrat. During the first decade of the existence of this industry little progress was made. However, it lived, and early in the sixties the demand for it began to increase, and the cultivation of the tree and the manufacture of lime-juice has gone on slowly increasing up to the present time.

The area under cultivation in Montserrat this year will be about 1,200 acres, of which about 900 acres are in fruit-bearing trees. The industry is carried on in a more systematic manner in Montserrat that in any of the other islands of the group, the Montserrat Company having had for several years a competent chemist to superintend the manufacture of lime-juice and to advise in the agricultural management of their orchards. The work he did is still bearing fruit, and to-day Montserrat is the chief seat of the lime industry of the Leeward Islands.

The trees are raised from seed in nurseries, and transplanted when 10 to 18 inches high to the orchard, where they are planted in rows about 15 feet apart, each acre requiring from 175 to 200 plants, light sandy loam soil being best suited to their vigorous growth. In Dominica, where the soil is rich, the lime tree attains its greatest height and yields the most fruit, a large juicy lime which is very rich in citric acid. A lime tree will grow in almost any soil, but the fruit is small and the life of the tree is not so long as in rich, well cultivated lands. In three or four years from the time of transplanting, the tree begins to bear fruit; about five years, however, would be the average time before fruit-bearing; and it continues to bear for over twenty years. From the seventh to the fourteenth year the tree is in full bearing condition. After this, if the orchard is to be continued, young trees must be planted to supply the place of the older ones as they wear out. The tree blossoms all the year if there be rain; but March and April are the principal flowering months, and the fruit begins to ripen in June; then the lime harvest begins, and reaches its height in August. From then on to December the yield decreases each month, and by February ceases altogether.

The largest crops are gathered in years in which the rainfall is heaviest. The average yield of fruit from an orchard in full bearing would be about 60 to 80 barrels (an ordinary flour barrel is employed in all orchards to gauge the quantity of fruit) from an acre per annum. This could, it is believed, be greatly exceeded by careful cultivation and manuring. A barrel of fruit will yield from six to seven gallons of juice, and each gallon of sound, ripe juice contains from twelve to fifteen ounces of citric acid.

The tree is subject to blight, which causes much trouble and materially affects the yield of fruit. No efficient remedy has as yet been found for this evil. With better cultivation and manuring, I have no doubt, this would be remedied, as only the weak and sickly appear to suffer.

The fruit when ripe falls to the ground, and is collected by women and children and carried to the works, where it is measured by an overseer, who credits each person with the amount collected each day; and on Saturday the quantity collected by each gatherer is paid for at the rate of from six to twelve cents per barrel, according to the scarcity of the fruit and the distance of carriage.

The produce exported from a lime plantation is as follows: Raw and concentrated lime-juice, green and pickled limes, and essential oil.

Raw lime juice is simply the juice from good, sound, ripe fruit, carefully preserved in casks. For the best quality the limes are crushed between the rollers of a mill. Old cane-mills are usually employed for this purpose. The first two rollers are carefully adjusted to admit the lime; the second and third usually extract all the juice, which is then run into casks and is ready to ship. Most of the raw lime-juice is sent to the English market.

In the manufacture of concentrated lime-juice the crushing is done in the same manner as for raw lime-juice. The fruit, however, is not selected as for raw lime-juice. On plantations where both kinds are manufactured, the fruit which is unfit for manufacturing into raw lime-juice is crushed and then manufactured into concentrated lime-juice. This process consists in boiling the juice in open pans, such as are used in the manufacture of muscovado sugar, until it is reduced to one-eighth or one-tenth of its original volume; it is then a black viscid fluid containing from 80 to 100 ounces of citric acid per gallon. When the juice has been concentrated to the desired strength, it is run into second-hand beer casks and shipped principally to the New York market.

Essential oil, another valuable product obtained from the lime, is made largely on the Montserrat Company's estates and on a number of estates in Dominica. There are two kinds of essential oil of lime: the hand-made, which is the most valuable; the other, an oil procured by distillation. The hand-made commands a much better price, as its perfume is not affected by the heat necessary in distillation. The common mode adopted of extracting this oil from the lime consists of the use of a shallow concave metal plate shaped like an ordinary saucer, in which are studded a number of blunt copper spikes, and from the centre of which there is a tube, in which the oil runs as it escapes from the rind of the lime. The tube serves as a handle, and the lime is gently and quickly rolled over the blunt copper spikes until all the oil sacs are burst, and the oil escapes and runs into the tube. When the tube is full, the oil is poured into bottles and securely corked. Women are generally employed at the work, and they select only the finest fruit, which yields the greatest quantity of oil. The limes so used are then put through the mill for the manufacture of lime-juice. When the bottle is full, it is allowed to stand for some time until the water and other impurities settle. The oil is then carefully drawn off, and filtered as it is run into tinned copper vessels ready for export. Most of the oil exported from Dominica is manufactured by distillation from the lime-juice which leaves the mill. It is very much inferior to hand-made. It is chiefly employed now for scenting soaps and in the manufacture of common essences and perfumes. There are other modes adopted of procuring essential oil from limes; but, as they are not generally adopted by the majority of manufacturers either in Dominica or Montserrat, I do not think it necessary to describe them.

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[*] Report by Vice-Consul Galbraith, of Antigua.

The Value of Ehrlich's Urine Test for Typhoid Fever.

George M. Beringer, in *American Journal of Pharmacy*, November, 1892, contributes a paper on this subject.

The color produced by urine with a solution of sulphanilic acid has been claimed by Ehrlich as a means of detecting typhoid in its earlier stages, even before the appearance of the typical symptoms, *rash, etc.* Joseph W. England reported the following method of applying the test (*American Journal of Pharmacy*, 1891, page 611): A small quantity of a 1-per-cent. solution of sodium nitrite is added to the urine, and then a quantity of a saturated solution of sulphanilic acid in a 5 per cent. solution of hydrochloric acid, followed by the addition of ammonia. The test is stated to produce a urine color.

Dr. C. E. Simon, of the Johns Hopkins Hospital, recommends the contact method and the following modification of the test: "Solution 1, a saturated solution of sulphanilic acid in 5-per-cent. hydrochloric acid; Solution 2, a 5-per-cent. solution of sodium nitrite; 40 c.c. of Solution 1 is mixed with 1 c.c. of Solution 2, and an equal amount of urine is added and mixed; 1 c.c. of ammonia is now carefully run down the side of the test tube, and at the junction of the two liquids there will be observed a ring of the characteristic color varying from an eosine rose to a deep garnet red." This method of applying the test was followed by the writer in the experiments here recorded. Neither of these writers appears to question the reliability of the test.

The color produced in applying this test is undoubtedly due to changes in the composition of the amido-benzene-sulphonic acid (sulphanilic acid), which is changed by nitrites or nitrous acid in the presence of alkalies to diazo-benzene-sulphonic acid, and this, reacting with the peculiar principle present in the urine, produces the color, most likely due to an amine derivative. The reaction is analogous to that used in the estimation of nitrites in water.

The peculiar principle in typhoid urine producing the reaction still remains to be studied. Experiments showed that it could be extracted by ether from the urine strongly acidified with hydrochloric acid. The aqueous solution of the residue from the ether solution gave the characteristic reaction. But the urine rendered alkaline with sodium hydrate would not yield to ether any principle giving this reaction.

Having occasion to apply this test, I obtained typical reactions not only with known typhoid urine, but also in remittent fever and frequently where there were no febrile conditions at all.

This suggested a series of experiments to decide to what extent chemical products were likely to interfere in this reaction, especially those which from internal or external administration were apt to appear in the urine or were known to be normal or abnormal constituents.

In the experiments, 1-per-cent. aqueous solutions of the chemicals were used where the solubility would permit, otherwise saturated solutions.

Neutral liquids, such as alcohol, methyl alcohol, acetone, aldehyde, paraldehyde, ether, chloroform, and turpentine, were found to have no effect. The mineral acids and their salts, and organic acids such as lactic, oxalic, acetic, tartaric, and citric acid and salts, also gave no reaction.

Salicylates and benzoates gave an orange-colored reaction, the line having a distinct green tint.

The following alkaloids and neutral principles gave also no reaction: Quinine, strychnine, cinchonine, cinchonidine, morphine, codeine, cocaine, atropine, caffeine, salicin, piperine, propylamine, and phenacetin.

Upon adding a few drops of a 1-per-cent. antipyrin solution to the mixed reagents, there is produced at once the well known green coloration produced by this product with nitrites. The supernatant ammonia assumes a yellow color, separated sharply from the green solution by a brilliant red line.

Urea, uric acid, glucose, and saccharose were all found to have no affect. Albumin gave an orange to a red line, depending on the amount present; 2 drops of a 1-per-cent. solution gave a reddish-orange reaction, and upon increasing the amount of albumin it became a distinct red. While pepsin gave but a green line, the addition of a very small quantity of peptone resulted in producing a distinctly pale red line.

The most minute quantities of phenol and creasote gave a dark red at once, and a single drop of a 1-per-cent. phenol solution gave a reaction identical with that obtained from typhoid urine. Sulphocarbolates of sodium and zinc gave a pale eosine red line, gradually darkening.

Beta-naphthol gave a brilliant magenta color, and resorcin a dark red-brown, at once. Thymol and eugenol likewise produced the red line. Gallic acid and pyrogallol produce a dark red, the entire layer of ammonia quickly assuming the same color. With tannic acid the reaction is peculiar, the mixed test solutions assuming an orange coloration and the ammonia becoming red, a green-colored line sharply marking the separation.

From the above, I am compelled to question the claims that have been put forth for the value of this test.

While the absence of the reaction may indicate the absence of typhoid, the presence of the reaction would not warrant the diagnosis of typhoid unless supported by other evidence, as many of the products producing the reaction, notably phenol and peptone, may be present in the urine from other causes.

Caffeine and Theine—Their Identity, and the Reactions of Caffeine with Auric Chloride.

In consequence of the conclusions of Mayo (*Journ. Physiol.*, 7, 458; *Therapeutic Gazette*, 1886, 587) and, more recently, of Lauder Brunton, and Cash (*Proc. Roy. Soc.*, 42, 283; *Journ. Physiol.*, 9, 112), that the physiological action of theine obtained from tea differs in certain respects from that of caffeine obtained from coffee, the authors have searched for evidence of isomerism in these bases, the existence of which is not put beyond doubt by the chemical comparison of them which has hitherto been made.

Having extracted theine from tea and caffeine from coffee, it is shown that the two substances exactly resemble each other and melt at precisely the same temperature, viz., 234.5° (corr.). From each base the crystalline *aurochloride* ($C_8H_{10}N_4O_2,HCl,AuCl_3,2H_2O$) was prepared, and these two salts both melted at 242.5° (corr.). When dried at 100° they both lost the equivalent of two molecular proportions of water, and the anhydrous salts melted at the same temperature, viz., 248.5° (corr.). The analytical data corresponded with the formulæ given above. The complete correspondence in the properties and composition of the aurochlorides is satisfactory evidence of the absence of a structural difference in the bases. In order to further confirm the identity of the two substances, a specimen of each was converted into the *mercuric chloride compound* ($C_8H_{10}N_4O_2,HgCl_2$), a stable crystalline salt. Both preparations were found to melt at the same temperature, viz, 246° (corr.), and to exactly correspond with each other in other respects.

The complete identity of caffeine and theine having thus been demonstrated, the observed differences in physiological action must be ascribed either to impurities in the specimens used or to variations in the animals employed in the experiments. The circumstance that theine was found to be more active than caffeine, and to be capable of producing effects not produced by caffeine, tends to support the view that the theine was impure. It is now well known that tea contains other bases than theine, the presence of traces of which might be sufficient to account for the observed differences.

During the preparation of the pure aurochlorides for a comparison of their properties, the authors obtained two new and interesting auric derivatives of caffeine.

When an aqueous solution of caffeine aurochloride is heated, a yellow, flocculent precipitate is gradually formed, which is insoluble in alcohol, chloroform, and ether, but dissolves in hydrochloric acid, reproducing the aurochloride. The substance dried at 100° forms a pale yellow, amorphous powder, which melts at 207° (corr.). Analysis proved it to be *aurochlor caffeine* $C_8H_9(AuCl_2)N_4O_2$, a substance in which one atom of hydrogen in caffeine is replaced by the group ($AuCl_2$). It is pointed out that the ready formation of this remarkable compound from caffeine aurochloride by the loss of two molecular proportions of hydrochloric acid—$C_8H_{10}N_4O_2,HCl,AuCl_3 = 2HCl + C_8H_9(AuCl_2)N_4O_2$—is better shown by Medicus's formula for caffeine than by that propsed by Emil Fischer; since in Medicus's formula the CH group which loses hydrogen is represented as contiguous to the doubly linked nitrogen atom, to which the auric chloride is attached.

By the reaction of an alcoholic solution of potassium chloraurate ($KCl,AuCl_3$) with a solution of caffeine in chloroform, a salt, crystallizing in dark red needles, was obtained. This is shown to be *caffeine potassium aurochloride* ($C_8H_{10}N_4O_2,KCl,AuCl_3$), which differs from caffeine aurochloride in containing potassium in the place of the hydrogen of hydrochloric acid. This salt melts at 208° (corr.). It readily dissolves in alcohol and water, forming yellow solutions, which appear to contain not the salt itself but its constituents—caffeine and potassium chloraurate. The salt is nearly insoluble in ether and chloroform, but prolonged contact with these liquids leads to its decomposition into caffeine and potassium chloraurate.

Both aurochlorcaffeine and the caffeine potassium aurochloride were obtained alike from the bases derived from tea and coffee.—Wyndham R. Dunstan and W. F. J. Shepheard [from the research laboratory of the Pharmaceutical Society] in ***Pharmaceutical Journal ond Transactions.***

On the Volumetric Determination of the Alkaloids.

I have ascertained that the best known alkaloids of vegetable origin are without action upon phenolphthalein, which they leave in the state in which it comes into contact with them; colorless if the medium is neutral or acid, rose-colored if it has been rendered alkaline by a mineral base. Such are quinine, cinchonine, cinchonamine, cinchonidine, quinidine, morphine, codeine, cocaine, aconitine (amorphous or crystalline), strychnine, brucine, veratrine, pilocarpine, duboisine, sparteine. On combining this observation (made, I believe, for the first time) with the well known property of the vegetable bases to turn red litmus blue, I have founded a general method for the volumetric analysis of the alkaloids.

If certain vegetable principles, hitherto regarded as alkaloids, do not react appreciably with phenolphthalein and litmus, it is doubtless because their properties are still imperfectly known, and that their chemical functions require accurate determination. For instance, narcotine, which, according to Pictet and Flückiger, can scarcely be regarded as an alkaloid and which is without action upon phenolphthalein and litmus; and atropine, which with these substances behaves like a weak acid.

However it may be, the alkaloid to be determined must be brought to the condition of a soluble salt by means of a mineral acid, *e.g.*, sulphuric acid, either in water or in a slightly alcoholic solution. An excess of acid does not prevent the reaction, but on the contrary rather promotes it. The presence of any salt of the alkaline or earthy bases, and even of a certain number of the heavy metals (*e.g.*, zinc), has no effect upon the process.

The following method of operation is very easily applicable to the determination of the alkaloids above mentioned, and also of the acids with which they may be combined:

Determination of the Acid.—We introduce into a beaker of Bohemian glass $\frac{1}{1000}$ part of an equivalent of the alkaloid or of a salt of the alkaloid, adding 10 c.c. of decinormal sulphuric acid in case of a salt, or 20 c.c. in case of a free alkaloid. We add 20 c.c. of neutral alcohol at 90 per cent., and three or four drops of an alcoholic solution of phenolphthalein. All the salts of the alkaloids dissolve in this acid-alcoholic liquid. We then pour in decinormal potassa until there appears a faint rose-colored tint of phenolphthalein. The number of c.c. of decinormal potassa used expresses all the acid, free or combined, existing in the mixture. The rose-tint of phenolphthalein appears only when all the alkaloid is in the free state in the liquid—as a transparent solution if the alkaloid is soluble in a weak neutral alcohol, or as a precipitate if it is insoluble. We have thus a mixture indifferent to phenolphthalein, but alkaline to litmus in consequence of the liberation of the alkaloid.

Determination of the Alkaloid.—Into a second beaker of Bohemian glass we introduce $\frac{1}{1000}$ of an equivalent of the alkaloid, or of a salt of an alkaloid, with 10 or 20 c.c. of decinormal sulphuric acid, and then some drops of a sensitive tincture of litmus. The color is then rendered blue again by means of decinormal potassa. The number of c.c. of the alkaline liquid employed in this second saturation represents merely the free acid. If this number be subtracted from the figure which in the foregoing operation measures the entire acid, it expresses exactly the quantity of sulphuric acid combined with the alkaloid in the state of a basic salt, and consequently the weight of the alkaloid itself. It is, in fact, sufficient to multiply the remainder from the subtraction by $\frac{1}{10000}$ of the equivalent of the alkaloid in question. The factors are evidently:

For anhydrous quinone	0.0324
For cinchonine	0.0294
For codeine (H_2O)	0.0317
For morphine (H_2O)	0 0303

—L. Barthe in *Comptes Rendus*, vol. cxv, p. 512; *Chemical News*, Nov. 4, 1892, p. 223 (*American Journal of Pharmacy*).

Reactions of Hydrastine and Other Alkaloids.

In the *American Journal of Pharmacy*, August, 1892, is produced an article in which Dr. Vitali reports his experience.

If a small crystal of hydrastine, or one of its salts, be placed on a porcelain capsule and covered with concentrated sulphuric acid (0.5–1 c.c.), it turns yellow, and, on stirring, the liquid acquires the same color; on adding a small fragment of nitre (an excess must be avoided), the color changes to a more or less intense brownish-yellow; if a solution of stannous chloride be now added drop by drop, the solution acquires a magnificent reddish-violet color, the intensity of which depends on the amount of alkaloid present. This coloration is not destroyed on dilution with water.

If a particle of hydrastine be treated with nitric acid (4 to 6 drops), the alkaloid turns yellow; on heating for an instant to the boiling-point, nitrous fumes are evolved, and, on evaporating to dryness at a gentle heat, a yellowish residue is left, which, when cold, is colored brownish-yellow by alcoholic potash, and remains as a greenish-brown mass on evaporating the alcohol. When cold, this becomes deep-violet on treatment with sulphuric acid. Solutions of hydrastine must be evaporated to dryness before applying the tests, which are sufficiently delicate to detect 0.0001 gramme of the alkaloid.

Bebeerine turns blood-red on treatment, as described, with concentrated sulphuric acid and nitre, the color changing to green on the addition of stannous chloride. *Codeine* turns dark brick-red when alcoholic potash is added to its solution after treatment with nitric acid, and coffee-colored when further treated with sulphuric acid; similarly, *narcotine* acquires an orange color on the addition of potash, the color changing to violet-red on adding sulphuric acid, and red to yellow on diluting with water.

A rather less delicate test for hydrastine is as follows: A particle of the solid alkaloid is fused with five or six times its weight of caustic potash, the melt allowed to cool, acidified with hydrochloric acid, extracted with chloroform, the extract evaporated to dryness on the water bath, and the residue treated with a very dilute solution of ferric chloride; a fine, blue coloration is obtained if a few milligrammes of the alkaloid have been employed; the color is destroyed by acids, and changed to brownish-red by alkalies.

A characteristic reaction for *aconitine* is obtained by adding to it in small quantities a solution of potassium permanganate in sulphuric acid (1:200), and stirring; the green color of the reagent is replaced by a violet tint, which disappears on further agitation, and is restored on adding more of the reagent, and so on. A point is ultimately reached at which the color is not affected by agitation, but at once disappears on diluting with water.

Clear indications of the presence of hydrastine in putrid animal matter cannot be obtained if the latter be treated by the Stas-Otto method, on account of the ptomaines and other impurities contained in the extract.

Hydrastine is, however, extracted from alkaline (but not from acid) solutions by light petroleum; and, by taking advantage of this fact, and substituting baryta for sodium carbonate, and light petroleum for ether, in the extraction, it is possible to isolate the alkaloid in a state of sufficient purity. The author recommends the use of light petroleum in place of chloroform, ether, or amyl alcohol in the extraction of alkaloids from urine and animal remains, as they are nearly all soluble in that menstruum (the exceptions are morphine, curarine, and pilocarpine), whilst ptomaines, leucomaines, pigments, and extractive matters are insoluble.

Manufacture of Camphor.

The manufacture of camphor is an important industry on the island of Kiu Shiu (Kew Shew).

From the port of Nagasaki there were exported in 1882, 15,166.18 piculs, valued at $277,792. A picul is 133⅓ pounds. From other ports of the island not yet open to foreign trade a large quantity was shipped by native merchants in native vessels to Shanghai, in China, and Hong Kong, whence it finds its way to India and England; little or none of it is exported to the United States. The camphor tree grows abundantly all over this portion of Japan. It is found alike on high elevations and in the valleys and lowlands. It is a hardy, vigorous, long-lived tree, and flourishes in all situations.

Many of these trees attain an enormous size. There are a number in the vicinity of Nagasaki which measure 10 and 12 feet in diameter. The ancient temple of Osuwa, at Nagasaki, is situated in a magnificent grove of many hundred grand old camphor trees, which are of great age and size, and are still beautiful and vigorous. I am told that there are trees at other places in Kiu Shiu measuring as much as 20 feet in diameter. The body or trunk of the tree usually runs up 20 and 30 feet without limbs, then branching out in all directions, forming a well-proportioned, beautiful tree, evergreen and very ornamental.

The leaf is small, elliptical in shape, slightly serrated, and of a vivid dark-green color all the year round, except for a week or two in the early spring, when the young leaves are of a delicate, tender green. The seeds, or berries, grow in clusters and resemble black currants in size and appearance. The wood is used for many purposes, its fine grain rendering it especially valuable for cabinet work, while it is used also for shipbuilding. The roots make excellent knees for ships.

In the manufacture of camphor the tree is necessarily destroyed, but, by a stringent law of the land, another is planted in its stead. The simple method of manufacture employed by the natives is as follows:

The tree is felled to the earth and cut into small pieces, or, more properly speaking, into chips.

A large metal pot is partially filled with water and placed over a slow fire. A wooden tub is fitted to the top of the pot, and the chips of camphor wood are placed in this. The bottom of the tub is perforated, so as to permit the steam to pass up among the chips.

A steam-tight cover is fitted on the tub. From this tub a bamboo pipe leads to another tub, through which the inclosed steam, the generated camphor, and the oil flow. This second tub is connected in like manner with a third. The third tub is subdivided into two compartments, one above the other, the dividing floor being perforated with small holes, to allow the water and oil to pass to the lower compartment. The upper compartment is supplied with a layer of straw, which catches and holds the camphor in crystalline deposit as it reaches this point of the cooling process. The camphor is then separated from the straw, packed in wooden tubs of 133⅓ pounds each, and is ready for market.

After each boiling, the water runs off through a faucet, leaving the oil, which is used by the natives for illuminating and other purposes.—*Paint, Oil and Drug Review.*

Hartwich on "The Discovery of America, and its Bearing on Materia Medica."

The Ducal Polytechnic High School at Brunswick received the author of this work into the ranks of its instructors a few months ago, as the result of a lecture which he now presents to his colleagues in expanded form. It is eminently fitting that pharmacognosy, through such a contribution, should swell the honors lavished upon the man who four hundred years ago discovered the New World. The author recalls the fact that, besides gold, spices and medicines were the objects of quest when Columbus began his voyage; it was hoped to find not only novelties, but in addition the products which Asia had long been yielding; and the world rejoiced when drugs and useful plants were discovered—not, indeed, identical with the Asiatic, but similar, equally valuable, or available as substitutes. Several were straightway transplanted to Europe and Southern Asia, as, for example, capsicum, tobacco, and corn, as also the very pretty if not useful nasturtion or Indian cress (*Tropæolum*); and the Spaniards, in turn, introduced into the New World a number of their own indigenous plants as well as some from Southern Asia.

The author, however, does not dwell long on this theme, which was long since exhausted by other investigators, but devotes himself more specially to the task of showing with what drugs the American flora enriched the European materia medica of the sixteenth century. To avoid too great amplification, the enumeration is limited to the Pharmacopœia for the German Empire, and its supplement issued by the German Apothecaries Union in 1891. In the former 25, and in the latter 22, American drugs are treated; but according to the plan of the author in his treatise, considering only the period between 1500 and 1600, over a dozen and a half of the most noteworthy crude drugs are exhaustively considered, and instructively enlarged upon by occasional incursions into other fields. The principal contents of the interesting dissertation are accordingly included in the history of the following drugs: Tobacco, cacao, Orleana, guaiac, capsicum (referring to the South American piperaceæ), red wood, and other dyewoods of the West Indies and Central America, coca, jalap, sassafras, sarsaparilla, ipecac, serpentaria.

To the foregoing are attached excerpts from the German medical tariffs for the years 1599, 1632, 1653, 1657, 1659, 1761, 1762, as well as the inventories of the "Rathsapotheke" at Brunswick from 1597 to 1658, which throw light on the time of the introduction of American drugs into the German drug stores.

In the preparation of his attractive treatise Prof. Hartwich had at his service the useful labors of many predecessors, upon which he has drawn with discrimination and not without making many a valuable completion and correction, based on his personal study of the original sources.

Pharmacognosy is already indebted to the author for a stately array of valuable labors, especially in the domain of histology; with his present not less scholarly performance he enters for the first time upon the field of our profession's history. Of this we may accordingly take cognizance at the moment of the gratifying announcement that Prof. Hartwich, accepting the call of the *Eidgen. Schulrath*, is about to occupy the chair of our esteemed friend Schär.—F. A. Flückiger, in the *Schweiz. Wochenschrift f. Chemie und Pharmacie.*

Condurangin.*

Condurangin is a glucoside, first obtained by Vulpius, from the bark of *Gonolobus Condurango*, and considered by some writers as identical with vincetoxin from *Asclepias Vincetoxicum*. It may be separated into two parts, one of which is soluble in water, the other insoluble. The best method of preparing it is to extract the bark with 95-per-cent. alcohol in a reflux apparatus, filter, distill off the greater part of the alcohol, take up with cold water, filter again, add concentrated solution of ammonium carbonate, and heat gently. The precipitate thus formed is washed with hot water, redissolved in cold water, containing if necessary a few drops of alcohol, basic lead acetate added, the precipitate thoroughly washed, suspended in water, and decomposed with hydrogen sulphide; the brown solution obtained is then precipitated with a concentrated solution of common salt. The precipitate, after purification, consists of a mixture of the two modifications of condurangin. Insoluble condurangin is precipitated from a benzene solution on the addition of excess of light petroleum, as a light, almost white powder, which melts at 60–61°, and has the percentage composition $C_{20}H_{32}O_6$. Its molecular weight, as determined by the cryoscopic method, agrees with this formula.

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* *Gazzetta*, 22, i, 236–242; *Journal Chemical Society*, 1892, p. 1352.

Soluble condurangin, obtained by the evaporation of an aqueous extract of the mixed varieties, is a yellowish substance, melting at 134°. It appears to have the composition $C_{18}H_{28}O_7$, but its molecular weight could not be determined. On boiling either of these compounds with acids, the principal product is a brown, pitchy substance, insoluble in water. With Fröhde's reagent, an aqueous solution of the soluble condurangin yields a greenish coloration, and after a time a flocculent green precipitate; the insoluble variety, suspended in water, gives no reaction, or only a yellowish coloration. —*American Journal of Pharmacy*, December, 1892.

A Substitute for Liniment and Ointment of Potassium Iodide.

Although potassium iodide is frequently intended to be absorbed by the skin, yet there are several diseases in which local action only is wished for. From experiments by Dr. Bohn and by Dr. Luff (*Pharm. Journal* [3], vol. xix, p. 865, and vol. xxi, p. 206), lanolin appears to be the most suitable base when only local action is required. Vaselin, on the other hand, is shown by Dr. Luff to be the most suitable when absorption of the active ingredient is required—a conclusion which is in direct contradiction to that of Dr. Bohn. As Dr. Luff is a reliable and experienced authority on medical matters, we are justified in considering his conclusions correct. It would, accordingly, appear that a mixture of vaselin and lanolin would form a desirable base. However, an ointment so made (using an aqueous solution of the salt) showed signs of decomposition after a few days. It occurred to me that glycerin might prevent this decomposition. The ointment was accordingly made over again, with the difference that glycerin was mixed with the aqueous solution of the salt previous to incorporating it with the fats. Thus prepared, no decomposition has taken place as yet, and I am inclined to think this will prove a stable and reliable preparation. I would, therefore, suggest that an ointment prepared as follows be submitted to trial by the medical profession:

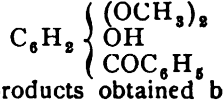
Take of—		Parts.
Iodide of potassium		60
Distilled water Glycerin	ää (by measure)	60
Lanolin Vaselin	ää	110

Melt the lanolin and vaselin together in a warm mortar, and stir until cold. Dissolve the iodide in the water, add the glycerin, and incorporate it with the base by trituration.

This ointment contains practically 15 per cent. of the active ingredient, but the strength of it could be readily increased.—*National Druggist*, Jan. 1, 1893.

SOMNAL.—The *Revue de Thérapeutique* considers somnal a poison which destroys the red corpuscles. Continued use of the drug is also followed by severe disturbances of digestion, vomiting and pains.

GOVERNMENT FEBRIFUGE IN INDIA.—According to the *Indian Agriculturalist*, experiments have been made as to the relative efficacy of sulphate of cinchonidine and Government cinchona febrifuge, with the result that the manufacture of the former drug by Government quinologists is strongly recommended, in preference to the present manufacture of cinchona febrifuge. The reasons given are that it is more easily administered, while its cheapness brings it within the reach of the very poor and would enable local boards to give it away in greater quantity. It is, however, found that cinchonidine can be imported more cheaply than it can be manufactured. The Government will, therefore, not, manufacture cinchonidine, but continue making the febrifuge.

PARACOTO OIL.—The oil of paracoto bark has been found by Wallach and Rheindorff to contain as its chief constituents a sesquiterpene $C_{15}H_{24}$, and the methyl ester of eugenol $C_6H_5.OCH_3.OCH_3.C_3H_5$. It is of interest to note that paracoto bark contains other substances which have a close relation to methyl eugenol, as, for instance, the hydrocotoin obtained by Ciamician and Silber, with the formula  $C_6H_2\left\{\begin{array}{l}(OCH_3)_2\\ OH\\ COC_6H_5\end{array}\right.$ They are of opinion that the three products obtained by Jobst and Hesse were mixtures of lævo-rotatory sesquiterpene and inactive methyl eugenol. It is possible that the α-paracotol may have been a hydrate of cadinene $C_{15}H_{24}$, which occurs in juniper tar, patchouli, and galbanum oils. —*Annal. Chem.*, 199, 75.

BOUILLIE BORDELAISE.—This preparation has been proved to be a specific for the potato blight caused in Europe by the *Phytophthora infestans*, and the following formula for its preparation appears in the *Kew Bulletin* for October:

Copper sulphate	45 lbs.
Quicklime	22½ lbs.
Water	220 gallons.

The sulphate is dissolved by suspending it, in a coarse cloth, in a wooden vessel containing the water. Slake the quicklime in a separate vessel, and, after stirring thoroughly with added water, pass it through a sieve into the copper solution; stir well, and add the remaining water. The quantity specified is sufficient for one acre of land.—*Pharmaceutical Journal and Transactions*, Nov. 12, 1892.

Gymnocladus Canadensis.—J. H. Martin describes this tree, which is widely distributed on the American continent. It varies from 50 to 100 feet in height, has a thick, scaly bark, and dense, rose-colored wood admitting of a high polish. The leaves, steeped in water whilst green, serve as a fly-poison, and the immature fruit appears to have some toxic properties. The roasted beans, however, are used as a substitute for coffee; and the pods, when preserved like those of tamarind, are said to be wholesome and slightly aperient. On submitting various parts of the tree to proximate analysis, no indications of the presence of an alkaloid could be obtained. Saponin was found in all parts, and appears to be the principle to which the physiological activity of the plant is due. Dr. Owens has described the action as that of a typical respiratory poison.—*American Journal of Pharmacy*, lxiv, 557 (*Pharmaceutical Journal and Transactions*, Dec. 3, 1892).

Balata.—This is a substance resembling gutta-percha in its properties, and is obtained from the *Mimusops globosa*, Gaertn., or *M. Balata*. Though it has been known for some years, and at one time was used to some extent, it was objected to on account of its tendency to become brittle and crack on exposure. In a recent report on the trade of Paramaribo it is stated that the balata industry is reviving, so much so that special laws have been framed to regulate it. Much foreign capital is being attracted to the district, and overseers supervise the work of collection and see that the trees are not destroyed. All the balata collected has to be conveyed to the government depots, where it is weighed, and a tax is collected on it. The greater part of the product is said to be exported to England *via* Demerara.—*Journal of the Society of Arts*, xl, 1020 (*Pharmaceutical Journal and Transactions*, Dec. 3, 1892).

A New Reaction of Grape Sugar.—According to O. Rosenbach a deep brown-red or orange-red color will be developed if to a solution of glucose or lactose be added a few drops each of solutions of sodium hydroxide and sodium nitroprusside and the mixture then boiled. Quantities as small as $\frac{1}{10}$ per cent. can be detected in this way, but the color will be deep yellow tending to red in such a case. The test is equally applicable to urine containing sugar; but it must be observed that the red color *immediately* appearing after addition of the sodium nitroprusside to the urine made alkaline, is not due to sugar but to kreatinin, according Weyl; to this red color will disappear upon further heating, and, in the event of sugar being present, give place to the permanent brown-red color above mentioned, which upon addition of acid gradually changes to a bluish color.—*Centralbl. f. Kl. Med.*

Synonyms of Popular Antipyretics.—*Antipyrin.* Phenyl-dimethyl-pyrazolon. Phenyl-dimethyl-iso-pyrazolon. Oxydimethyl-chinizin. Dimethyl-oxychinizin. Analgesin. Anodynin. Parodyn. Sedatin. Metozin. Phenylon. Pyracin. Pyrazolon. Phenazon.

Antifebrin. Acetanilid. Phenylacetamide. Acetyl-phenylamine.

Exalgin. Methyl-phenyl-acetamide. Methyl-acetanilid. Ortho-methyl-acetanilid. Methanilid. Methyl-antifebrin.

Methacetin. Para-acet-anisidin. Acet-para-anisidin. Para-oxymethyl-acetanilid. Methoxy-antifebrin.

Phenacetin. Acet-phenetidin. Acetyl-phenetidin. Phenetidin. Phenedin. Oxyethanilid. Para-oxyethyl-acetanilid. Oxyethyl-phenyl-acetamide. Para-acet-phenetidin. Acet-para-phenetidin. Para-amido-phenol.—*Pharm. Rundschau*, November, 1892.

Corrosive Sublimate as a Disinfectant.—A. C. Abbott concludes that under the most favorable conditions a given quantity of corrosive sublimate can render inert only a certain number of individual micro-organisms. He regards the process as essentially a chemical one, being a direct combination, resulting from the action of the dissolved sublimate on the blood plasma of the germs. The disinfecting activity of the salt would appear to depend upon the proportion of albuminous material in the medium containing the bacteria. For this reason the application of sublimate to wound surfaces is objected to. Since the albumin of the tissues and fluids of the body tends to render the salt inert by combining with it rapidly, it is suggested that those tissues are rendered less able to resist the attacks of bacteria. Though, therefore, corrosive sublimate is a powerful germicide, it may have serious disadvantages as an antiseptic wash or dressing for wounds.—*Johns Hopkins Hosp. Bull.*, *B. M. J.* Sup., 1665, 88 (*Pharmaceutical Journal and Transactions*, Dec. 3, 1892).

The Chemistry of Chlorhydro-sulphate of Quinine.—E. Grimaux, at the French Academy of Sciences, November, 1892, read a paper on this subject, which is published in *La Tribune Medicale*, Nov. 10, 1892. He said:

In a preceding note on this subject I sought to establish that in the basic salts of quinine the acid is united, not to the nitrogen of the quinoleic group, but to the azote of the other group, probably of a piperidinic nature.

It seemed to me that the nitrogen of the quinoleic group might also be made to unite under the influence of an acid, and thus form double salts of quinine, with two different acids—salts which hitherto had not been prepared. The trials undertaken on this line permitted me to obtain the chlorhydro-sulphate and the iodohydro-sulphate, as also the corresponding phosphates.

The chlorhydro-sulphate is, in fact, a definite chemical compound and not a mere mixture. When left to itself in dry air, or when its crystalline crust is separated from the mother-waters and dried on porcelain at 100° C. of heat, it gives on analysis the same figure as does the total mass.

The chlorhydro-sulphate of quinine is very soluble in water at 25° C.; one part of the anhydrous salt dissolves in 1.16 parts of water. It contains 74.2 per cent. of quinine; the medical sulphate ($7H_2O$) contains 74.3 per cent. of quinine.

The hydrated salt fuses at 125° C., resolving into an amber-colored liquid, which forms, on cooling, a gummy mass. Anhydrous, it turns brown in melting, and its fusing-point varies indefinitely between 165° and 170° C.

If we dissolve the basic sulphate of quinine by means of one-half the quantity of hydrochloric acid, we find that solution can be obtained only by the aid of heat to ebullition and the use of five parts of water. On cooling, a certain quantity of basic sulphate is separated and the liquor retains chlorhydro-sulphate. The salt, to a single molecule of hydrochloric acid, does not appear to exist here, or, in its solution at least, decomposes into basic sulphate and chlorhydro-sulphate.

MISCELLANEOUS FORMULAS FOR FROST-BITE.—The various mineral acids suitably diluted are generally recommended, as are also tannin, borax, alum, camphor, ichthyol, collodion, and iodine. Saalfield writes in the *Therapeutische Monatsheft* that good results are obtained by treating the hands with flexible collodion. Hold up the arm until the hand is white, then paint the affected fingers, repeating the application several nights in succession.

Tincture of iodine may be painted on, either alone or with an equal proportion of tincture of galls, or it may be added in the proportion of 10 to 20 per cent. to collodion.

Ichthyol is ordered in a 50-per-cent. salve or in still stronger concentration. Since frost-bite is very stubborn, Saalfield furnishes a series of formulas below, as one will sometimes prove efficacious where others fail:

		Parts.
I.	Tannin	2
	Glycerin, or	
	Spirit of camphor	50
	Rub on the parts.	
II.	Tannin	2
	Alcohol	5
	Collodion	20
	Tinct. benzoin	2
	Paint on the affected parts. (Paschkis.)	
III.	Powdered camphor	3
	Lanolin	15
	Vaselin	15
	Hydrochloric acid	2
	Rub on in the evening. (Carrie)	
IV.	Balsam Peru	5
	Oleo-Balsamic mixture	30
	Cologne	30
	Paint on the affected parts. (Rust.)	
V.	Alum	2
	Borax	2
	Rose-water	150
	Tinct. benzoin	5
	Apply on a cloth.	
VI.	Alum	4
	Glycerin	2
	Yolk of egg, cooked	1

—*American Druggist.*

THE WORLD'S CONGRESS OF PHARMACISTS will meet on Monday, Aug. 21, 1893.

THE AMERICAN PHARMACEUTICAL ASSOCIATION will hold its next annual meeting in Chicago, Aug. 14 to 19, 1893.

BOTANICAL EXHIBITION AT GHENT.—A botanical exhibition, which should offer many points of interest from a pharmaceutical standpoint, will be held in Ghent (Belgium) from April 16 to 23, 1893, under the auspices of the Royal Agricultural and Botanical Society of Ghent.

THE DEMAND FOR EUCALYPTUS.—The *Chemist and Druggist*, Dec. 19, 1892, informs us that seven factories are about to start the distillation of eucalyptus oil at Kangaroo Island, South Australia. A new eucalyptus oil, distilled in the Mallee district of Victoria, from *Eucalyptus oleosa* and *E. gracilis*, is also being offered in Melbourne.

A SUPPLEMENT TO THE FRENCH PHARMACOPŒIA. —The preliminary arrangements are being made for the preparation of a supplement to the Codex Medicamentarius, or French Pharmacopœia, published in 1884. MM. Bourgoin, Brouardel, de Beauchamp, Gilbert, Hayem, Jungfleisch, Petit, Planchon, Pouchet, Regnauld, Vigier, and Yvon, have been appointed on the committee charged with the undertaking.

A PHARMACY NEARLY FIVE CENTURIES OLD.—The City-pharmacy in Schweinfurt, Germany, has just changed hands. This business dates from 1412, and is believed to be the oldest in the Empire. It was originally established by the city of Schweinfurt, which in the year named voted for the purpose 5,000 florins, an unprecedentedly large amount for those times. The first pharmacy in Germany was founded at Nuremberg in 1404.

THE O. & W. THUM COMPANY SCORES A VICTORY. —A decision was rendered on Dec. 28th, by Judge Carpenter, of the United States Circuit Court, district of Massachusetts, in the case of O. & W. Thum *vs.* John Andrews & Co., in favor of the complainants. This has been a long-drawn-out and hotly contested suit. Every point involved was fully discussed and considered, and in every point were the complainants sustained. The decision firmly establishes the O. & W. Thum Co.'s rights to the sealing border and other features of their Tanglefoot Sticky Fly Paper. The success of Tanglefoot is the result of much labor, time, and money spent in perfecting and introducing it, and the O. & W. Thum Co. naturally feel that they are entitled to the benefits of their patents. The decision in this case is of special importance and interest, as it will enable them to suppress several close imitations of Tanglefoot and infringements on their patents.

A New Poison Cabinet.—Baron A. Meade, Osborn House block, Rochester, N. Y., has devised a new poison cabinet, consisting of a revolving circular case, having three shelves with thirty-two separate compartments for the reception of the containers of the poisonous drugs. In front there are three doors, one for each shelf, which are opened by pressing upon the corresponding key placed at the lower left-hand corner of the case. The mechanism is such that only one door can be opened at a time, it being necessary to shut this betore the case can be revolved sufficiently to bring one of the other doors square to the front. The compartments on the separate shelves are so arranged that no two are exactly over each other. The inner circular case is revolved with the greatest ease by means of a knob under the base, being a continuance of the pivot upon which the case turns. The cabinet is made in several styles, but the mechanical device is the same in each. The dimensions are: 14 inches square, and 30 inches in height, exclusive of the base.—*American Druggist.*

A Substitute for Glass for Covers and Slides.—Dr. Edwards writes, in *Science Gossip*, as follows: I think the price of slides and covers for microscopic use is enormously high, and as they can be made of a substance much cheaper and at the same time possessing properties which glass has not (viz., being unbreakable) the fact should be known. In using celluloid, which is wood rendered soluble in ether and acohol with gum camphor, for films for microphotography, I was struck with some of its properties that made me think it could be used in microscopy. It is transparent, almost as transparent as glass, unbreakable, the weight is very little (making it especially valuable when sending by post), and it occupies very little room. It is stronger than wood, has no fiber, and can be cut readily with scissors. It can be obtained with a ground surface as well as plain, and the cost, which is a great item, is next to nothing. Very thin celluloid films are commonly used for instantaneous covers, and this can be employed for both, while the thicker kind used for ordinary photography makes capital slides. In fact, I have some an inch square which I use in this way, mounting it temporarily in a glass slide for use on the microscope. Let all microscopists try it and they will not repent.—*National Druggist.*

Pasteur Birthday Celebrations.—The celebration of the seventieth anniversary of M. Louis Pasteur's birthday on Tuesday, Dec. 27, 1892, assumed the proportions of an event of national importance. The gold medal presented to the eminent scientist by the President of the Academy of Sciences was obtained by an international subscription. It bears on one side the head of M. Pasteur, and on the other an inscription as follows: "A Pasteur, le jour de ses soixante-dix ans; la science et l'humanité reconnaissantes, 27 Decembre, 1892." During the ceremony the chair was occupied by President Carnot, who was supported by several members of the French Government and of the Corps Diplomatique, whilst Sir Joseph Lister was present to represent English surgical science. Several speeches were delivered by distinguished personages, and addresses were presented from every medical body in France, as well as from the Faculties of Medicine of Geneva, Genoa, Ghent, Lausanne, Liège, the London Association for the Promotion of Medical Science, the University and Royal College of Physicians, Dublin, the Academy of Sciences at St. Petersburg, and numerous other foreign medical societies. The Berlin Medical Society has elected the celebrated bacteriologist an honorary member as a special mark of honor, and the Medical Faculty of the University of Utrecht has conferred upon him the degree of Doctor *Honoris causâ.*

An Interesting Wager, with a Moral.—In the controversy between the Secretary (Mr. W. Bodemann) of the Retail Druggists' Association of Chicago, and the department stores selling proprietary medicines, etc., the former, in a communication to the *Journal*, stated that he knew of an instance where, among the assets of an insolvent printer, was found a large quantity of bogus labels belonging to an apartment store in which the patent medicines bearing such labels were sold at less than regular cost price. This assertion Mr. McConnell of the Economical Drug Company undertook to controvert by the offer of a bet of $500 to $100 that it could not be proven. On the 13th instant the following letter, accompanied by a check, was received from Mr. Bodemann:

> Chicago, Dec. 12.—[To the Editor.]—I herewith enclose my check for $100, accepting C. H. McConnell's challenge in your issue of Dec. 10th. As soon as Mr. McConnell has deposited with you his check for $500 I will satisfy you absolutely of the truth of my assertion that the wrappers found in a certain printer's stock and the wrappers found around a certain patent medicine in a certain department store were identical, and that both were imitations of the original article. Respectfully,
>
> W. Bodemann.

Mr. McConnell was promptly informed of Mr. Bodemann's letter and check. As he has neither answered the one nor covered the other, it must be concluded that Mr. Bodemann's assertion is sustained in the trial by wager invoked by Mr. McConnell.—*Chicago Evening Journal.*

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[That Mr. McConnell, of the Economical Drug Co., should economize his bank account, is not to be wondered at; but a reasonable amount of the same kind of anxiety for the conservation of the English language would have saved him from his present awkward predicament. In this case it is Mr. McC., and not his money, that talks, although it would seem from the foregoing that he fancied his amateur effort in the line of ventriloquism would suffice to convince the listening public that the sound actually came from the money-bags. In making his challenge Mr. McConnell was prodigal of quotation marks, reminding the other side that "fools rush in where angels fear to tread;" and "betting is no argument, but often spikes the guns." The case in point is a somewhat pat illustration of both these adages, and of another, which says, "Shoemaker, stick to your last."]

Trade Supplement.

The BULLETIN *invites its advertisers and subscribers, and all connected with the drug trade, to send items of information, for these columns, concerning all new departures, products, and facts regarding the general and special trade interests of druggists.*

PARKE, DAVIS & CO., Detroit, announce the following additions to their list of medicinal preparations: "Migraine pills" (acetanilid 2 grs., camphor monobrom. ½ gr.). Malt extract in half-pound bottles. Hypodermic tablets of Pilocarpine muriate, ⅛ gr. (No. 74). Tablet triturates as follows: Extract Ergot, 1 gr. (No. 621); Iron 1 gr., arsenious acid $\frac{1}{60}$ gr., strychnine $\frac{1}{120}$ gr. (No. 622); Antipyretic (tinct. aconite, morphine, tartar emetic) (No. 623); Opium ¼ gr., lead acetate ¾ gr. (No. 624).

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THE O. & W. THUM CO. are getting out a new holder for their Tanglefoot Sticky Fly Paper, which will be an artistic thing in the way of engraving and printing, and an ornament when in use. The folding arrangement has been simplified and will be easily understood and readily set up by anybody. These changes will make this really useful article still more popular.

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J. GROSSMEYER, of Hazel avenue, Wilkes Barre, Pa., now occupies one of the best arranged pharmacies in Pennsylvania. His new building is a model of beauty and convenience. That his success may continue is our most hearty wish.

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H. T. GREGORY & CO., of Wyoming, Pa., have manifested an enterprising spirit in the conduct of their holiday trade. A magnificent display and courteous attention to all have been rewarded by a most liberal patronage. Their pharmaceutical department, which always contains a full line of P., D. & Co.'s products, has not been neglected during the rush of the holiday season.

⁂

DR. F. A. COOK, surgeon and ethnologist of the famous North Greenland expedition of Lieutenant Peary, which resulted in the closest approach to the pole yet attained, writes concerning Antikamnia: "The Antikamnia sent for use in the North Greenland expedition, was used with gratifying results. For rheumatism, neuralgic pains, as well as the pains which accompany the *grippe* it has no equal."

⁂

THE LIQUORINE SPECIFIC CO., of New York, announce a remedy for the safe and speedy cure of the liquor habit. Certainly this is a consummation devoutly to be wished. That there are some drugs that create a distaste for alcoholic drinks, is well known to all who have endeavored to treat chronic alcoholism. It is to be hoped that further experience will justify all that is anticipated for this remedy, in view of the prevalence of alcoholism.

⁂

HUGO ENGEL, A.M., M.D., in *Medical Summary*, says: "Antikamnia possesses two valuable properties—analgesic and antipyretic. That the effect of Antikamnia is fully analgesic and that alone, was proved in the case of P. B., aged 31. I saw him January 26th, because of a severe attack of hemicrania. The right pupil was widely dilated, and that side of the face congested. Within twenty minutes, administering four five-grain doses of Antikamnia, the pain stopped, but it took half an hour longer ere the disturbances of circulation disappeared. Had Antikamnia any effect on the vaso-motor nerve, the symptoms of congestion would have yielded before the pain stopped, while the contrary occurred. In general I may say that we need of Antikamnia a dose of about one-third larger than is necessary of antipyrin to obtain the same antipyretic effect, but Antikamnia may be given with immunity until double the dose (indicating the danger-limit) of antipyrin has been reached, while the reduction is maintained easier with a smaller dose, and the reaction threatened from a dose of Antikamnia larger than 80 grains is by no means so severe as that often ushered in when about 40 grains of antipyrin have been taken."

⁂

KANSAS.

Invitations are out for the meeting of the Kansas Pharmaceutical Association at Wichita. The local committee of arrangements, of which Howard Hettinger is chairman, are using every effort to make this meeting the most successful in the history of the Association.

Chas. Wells, traveling representative of the Potts Drug Co., reports quite a number of names of applicants already secured to be reported, for membership at the next meeting of the Kansas Pharmaceutical Association. Mr. Wells' great popularity will undoubtedly insure for him the very handsome prize offered by the Association for the largest number of new members secured by any one traveling man of the State.

A. H. Higbee, in charge of the pharmaceutical department of Mopike & Fox, of Atchison, was recently married to Miss Pringle, one of the reigning belles of St. Clair, Mich. The happy couple on their homeward journey were most hospitably entertained by Mr. Warren, of Parke, Davis & Co.

I. H. Hettinger, of Hettinger Bros., Wichita, was recently married to a Pennsylvania lady. On the arrival of the bridal party at Wichita, they were royally entertained by the Knights Templar, of which Mr. Hettinger is a member in high standing.

The Potts Drug Co., of Wichita, reports a constantly increasing trade, and that the business outlook throughout Southern Kansas and Oklahoma is most encouraging.

Messrs. Swift & Holliday, of Topeka, were, as usual, the successful bidders for the medical supplies for the eleemosynary institutions of the State. The constant success of this firm in securing this business over all competitors is a striking example of their energy and determination to keep the business of these institutions within the State.

⁂

MISSOURI.

Kansas City:

J. N. Scott, a well known druggist of this city, has opened a physicians' supply department in O'Reilley Bros.' drug store, 920 Main street.

S. J. Rowell has purchased the stock and fixtures at Eighth and Woodland streets formerly owned by C. J. Anderson, and intends to restock and fix up generally.

C. V. Hedrick, the ever genial druggist at Springfield avenue and Holmes street, has just returned from a visit of a fortnight "back in Ohio."

J. C. Neal, manager of R. J. Holmes' pharmacy at Eleventh and Walnut, went to Jefferson City to witness the inauguration of Gov. Stone on the 9th inst.

C. G. Nickells, the hustling druggist at Fifteenth and Virginia, has just returned from a week's stay at Chicago, and reports having had a lively time and that the Windy City is right in the "push."

F. E. Pellete, Central avenue and James street, has gone to Middletown, Conn., his old home, to remain a month or two. Mr. Woodmanser is in charge of his store.

⁂

MINNESOTA.

Geo. H. Bush has purchased the entire stock and fixtures of the old-established "Eyota Drug Store," and will entirely overhaul and replenish the stock. Mr. Bush is well and favorably known in Eyota, having made it his home since boyhood, and we see no reason why he should not be successful.

Miss Mary Haggarty, who for over a year past has successfully managed the pharmacy of Drs. Holms & Lane, of North St. Paul, has accepted the management of the old-established "Eyota Drug Store" for George H. Bush. Miss Haggarty is registered by examination in Minnesota, and we congratulate Mr. Bush on securing her services.

Charles X. Arps, Winona's popular West End druggist, has succeeded C. H. Beyerstadt on West Fifth street. Mr. Arps has been for some time manager of this thrifty little pharmacy, and having the confidence of the people in his locality, we bespeak for him success in the future.

B. O. Kyseth, for some years past in the drug business in Lanesboro, and Mr. Tollefson, of Canton, have succeeded C. O. Krogstad, Lanesboro's pioneer druggist, and in the future Lanesboro's citizens will read the new firm name Kyseth & Tollefson and have the privilege of selecting their goods from one of the largest and most complete stocks in Southern Minnesota.

E. C. Hellickson, who for some years past has been successfully connected with the grain trade at Mabel, has purchased the entire stock, fixtures, and the good-will, of Dr. E. R. Thompson, and in the future will favor the town of Mabel with the privileges of a first-class pharmacy. Fred. B. Collins, of St. Paul, will have the entire management of the pharmacy, while Mr. Hellickson will look after the postoffice work, which is in connection with the store. Fred says there is no use talking—he "can't read all the postal cards that go through the office and keep each quinine pill dusted off as it should be," so will attend only to the latter.

R. C. Larrabee has completed his studies at the Minneapolis College of Pharmacy, and will in the future devote his time to the drug business, being now a member of the firm of J. M. Larrabee & Son, of Le Roy.

H. S. Lovold, of Adams, Mower county, wishes his brother druggists to give him the name of a German physician who wishes to locate.

F. H. Hall, of the drug department of Minnesota's second hospital for the insane at Rochester, is again at his post, after a visit to his old home at Austin. He reports a jolly good time while away, and has settled down to hard work again. If you require pointers regarding malt extract with cod-liver oil, write F. H.

Victor Quale, who for some years has been located at the corner of Zumbro street and Broadway, will move his stock to 217 Broadway, where preparations are going on that will enable the citizens of Rochester to lift the latch of as neat and tastily arranged a pharmacy as Southern Minnesota boasts of. Mr. Q.'s move is a wise one, and from now on success will surely dance on his doorstep.

Minneapolis:

Messrs. Herrmann and Haugan, two old clerks of Jos. R. Hofflin & Co., have purchased the Bernard & Gibbs store at the corner of Fourth street and Second avenue south. The boys have lots of friends who wish them every success in their new venture, and if "hustling" counts they will surely "get there."

E. M. LaPenotiere, formerly of Seventh street and Hennepin avenue, has removed his stock to the Masonic Temple building, and will have a store that will do the city credit. As twenty prominent physicians have offices in this building, Mr. LaPenotiere has every opportunity for a lucrative prescription business. It is his intention to carry an elegant assortment of chemical and pharmaceutical preparations and cater to the wishes of his physician patrons.

Messrs. Weinhold Bros., the genial proprietors of the West Hotel Pharmacy, who also have stores at Nicollet avenue and Fourteenth street, and at Nineteenth street and Fourth avenue south, have recently formed a company with a capital stock of $20,000. The boys are pushers and will increase their business largely.

F. H. Hainert, the popular proprietor of the Metropolitan Pharmacy at the corner of Sixth street and Nicollet avenue, reports an elegant holiday trade in spite of the fact that the largest department store in the Northwest is directly opposite his place of business. He purchased a $1,000 assortment of Ricksecker's perfumes, and now that the holidays are over his perfume case needs replenishing for general use. Mr. Hainert was fortunate in having able assistance in the person of Miss Josie Wonous, a charming young lady graduate in pharmacy, who did zealous work in the toilet-requisite line.

Edward Shumpik, of Twentieth avenue north and Washington street, has purchased a Lippincott soda-fountain that will be by far the handsomest one in the Northwest. He has outlined his plans to the BULLETIN correspondent, and "Shumpik's Soda" will doubtless be known all over Minneapolis. "Here's hoping," Edward!

Henry Rauch, formerly of Rauch & Schmidt, will shortly open a pharmacy at Thirteenth avenue northeast and Main street. Mr. Rauch is well and favorably known in Minneapolis, and will undoubtedly prosper. He is a very capable man and deserves success.

J. W. Howden, formerly of Seventh and Farquier streets, has recently purchased at assignee's sale the store at the corner of Third and Market streets. This store has been a good one in its day, but under poor management has run down considerably. Mr. Bowden is quite popular, and is just the man to take this store and make it a "howling success."

A failure occurred here recently that for the drug business was rather unique. Geo. R. Paegel recently failed with liabilities aggregating $20,000 and assets only $3,500. This for a druggist was doing quite well—a regular Panama failure.

⁂

TEXAS.

Carroll & McCarty, Comanche, still enjoy the business of that little city, and are now doing quite a supply business for the surrounding country.

Wadsworth, Bain & Co., Weatherford, have succeeded R. W. Kindel in business, and are doing well.

L. T. W. Reynolds, Weatherford, better known as "Wig," still holds forth at the old stand, and is always ready to accord a hearty welcome to the "drummers."

L. W. Durham, Cleaburn, had his store converted during the holidays into the pride and joy of every child in town.

Were you ever in a busy drug store? If not, call and see T. B. Bond, Hillsboro, where the proprietor and clerks are kept busy from morn till night.

Two of Texas' well known prescriptionists became desirous of making a fortune in a very short space of time, so, hearing of a Gold Mine Drug Store in New Mexico, took first train for the objective fortune. They have since returned, much wiser young men and with less cash and admiration for the Territory.

San Antonio:

Orynski & Young will hereafter engage actively in the jobbing business.

West Bristow, finding business good, has taken unto himself a silent partner. We wish Mr. and Mrs. Bristow joy and smooth sailing.

O. Silverthorn is now to be found with his old-time smile, as his family are once more well—which news will be appreciated by his many friends.

Mr. Brande, late with Tips & Silverthorn, has gone to Velasco, Tex., to pass the winter in ease. Mr. Brock now holds down the prescription case.

Chas. A. R. Campbell has concluded to open another store, and all wish him success.

Fort Worth:

O. M. Waterhouse has been succeeded by Mr. Smallwood, from the Fort Worth Pharmacy Co., and Mr. Anderson, from N. N. True's. These gentlemen are very popular and will do a large business. Their many friends will be glad to learn of their new departure in business.

The jobbing houses have been taxed to keep up with their orders, and report business never better.

L. M. Whitsitt arranged such a beautiful display window that he caused a little colored boy to become envious of the contents; so said boy during the night broke the window with a rock, and now languishes in jail, supposedly wishing that Whitsitt's display had been less attractive.

Waco:

Will Schumacher, of Behrens Drug Co., has been confined to his home with slow fever for several weeks to the sorrow of his many friends, and all wish him a speedy recovery.

Behrens Drug Co. are very busy filling orders and taking yearly invoice of stock on hand.

O. Jennasch, for several years in charge of the laboratory at Behrens Drug Co., retired on January 1st; and Mr. Allerton, for years head prescriptionist at The Old Corner Drug Store, takes entire charge.

⁂

VERMONT.

C. D. Bagley, who was burned out by the St. Johnsbury fire in November, opened a well equipped pharmacy within thirty days, and is doing a good business within a stone's-throw of his old stand.

Many druggists throughout Vermont add to their profits by ticket brokerage. Very few are more successful than Bigelow & Holbrook, at Newport. The percentage of profit on mileage books beats that on "patent medicines" by several points.

H. W. Buck, Wells River, has bought two of the lots made vacant by the fire, and in the spring will erect a nice block to be occupied by him as a drug store.

Charles Wilson, of Wilson Bros, White River Junction, wears a full crop of whiskers this winter. Charles thought Benjamin would get there, and was with the snowed-under last November. Frank, his brother, is jubilant. This firm splits even, in politics.

W. M. Kimball, formerly of Kimball & Kendrick, "The People's Drug Store," Barre, is station agent at Keene, N. H.

For eight years, or four sessions, the druggists of Vermont have tried to secure the enactment of a law regulating the practice of pharmacy in the State. Each time the members from "wayback deestricts" have killed the bill introduced. This year a most liberal bill was introduced by Senator Hall; it passed the Senate, but met its doom in the House. Probably this programme will not be varied so long as fossils of the calibre indicated by a serious consideration of a bill to "make the capture of elephants in the State illegal" and "a bill to make unlawful the writing of prescriptions in other than plain English" are sent to Montpelier to legislate "for the people."

"Druggists' pets" run to cats in Vergennes, though T. Neville's pug "Don" may be said to fairly divide the honors; his intelligent recognition of friends wins any amount of petting for the handsome fellow.

⁂

NEW HAMPSHIRE.

Geo. H. Clark has succeeded Dr. J. W. Preston at Great Falls.

Chas. E. Cater, formerly of Great Falls, and of Berwick, Me., is in charge of Dufort's pharmacy, Manchester.

Sherry & Wormwood have bought the drug business of Dr. E. Duval, Rochester, and thoroughly renovated the store, making it one of the neatest pharmacies in the State. The boys ought to put up a family bitters. "S. & W." would be a catchy title.

J. L. Odell, Lakeport, has sold out to Plummer & Thompson. Mr. Plummer has been with Dr. Odell for some years and is a very competent man. The new firm have much improved the store since taking possession, and will give strict attention to a legitimate drug business.

The year 1892 has been characterized by many druggists as a bad year for the business; but Wm. D. Grace, Portsmouth, reports an increase over '91 of several thousand dollars. The close personal attention given to his business is no doubt the chief reason why his popularity grows.

Dr. C. A. Tufts, of Dover, has been a member of the Board of Pharmacy since its creation—seventeen years. Only the most satisfactory service would warrant the reappointment by successive Governors. Such service Dr. Tufts renders his State. It is gratifying to note that the latter is not ungrateful.

⁂

THE WEST.

Within the past sixty days three retail stores situated on Seventeenth street, Denver, Col., within four squares of one another, have closed—two having removed to other parts of the city (the Boston Pharmacy and Bourk's Pharmacy), and the other, T. D. Long's, having been closed by the sheriff. C. D. Lippincott, Sixteenth and Fremont streets, has within the past week made an assignment for the benefit of his creditors. These failures have had rather a depressing effect on the drug trade generally, which is reported as being exceedingly dull, and has been so for some time The usual fall fevers did not prevail to nearly the usual extent, and it being Presidential year, etc., trade has been very quiet. Druggists contemplating locating in Denver may be interested in knowing that this healthful city averages one druggist to each thousand, and, before coming here, would do well to investigate.

⁂

Editor BULLETIN OF PHARMACY:

It is a common occurrence to meet some unfortunate druggist who claims to have left a good position in the East, having contracted the Western fever, "thrown up" his situation, and taken his chances in the West. A Canadian friend told me within the past month that he had been in Victoria, B.C., and Seattle, Wash., for five months, and in all that time was unable to secure work in his regular line or in any other; further stating that he had been manager of a drug store in Kingston, Ont., at a salary of $75 a month, which is equal at least to $125 on the Pacific Coast.

This is one of many instances where good men are obliged to fare worse in the far West than they did in the East.

After looking over the field thoroughly, I would advise all drug clerks in the East to remain where they are, and at present not to follow Horace Greeley's advice of "Young man, go west."

Business in Oregon, British Columbia, and Washington is below par. Like other boomed towns and sections of this great and glorious Western Country, we are now experiencing the result of our too sanguine calculations.

Three years ago "The Puget Sound Country" was heralded from north to south, from the Atlantic to the Pacific, as the Eldorado of all places under the sun.

True, the country is just as rich in minerals and lumber as ever, and greatly improved in agriculture, compared with what it was in "boom days."

At the time of our recent inflation, times were good with us, money was plentiful, and the population of the different cities was beyond the accommodation of our hotels and boarding-houses. All were eager to own a corner lot in Portland, Tacoma, or Seattle. To-day things have changed; business is poor, payments are slow, there are more business establishments than ever, and we have any number of good men looking for employment in all branches of trade.

Our one trouble to-day is that our cities are ahead of the condition of the tributary country—which, to say the least, is an unhealthy state of affairs. Cities cannot be built in advance of the surrounding country and retain their commercial value.

Give us time and we will recover ourselves. Oregon and Washington are rapidly being developed. Our cities will enter upon a new era of commercial worth and prosperity. Until then we must wait.

H. W. H.

Portland, Ore., November, 1892.

VALERIAN PODWYSSOTZKI. 1818–1892.

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INDEX OF CONTENTS.

Editorial. PAGE

Valerian Podwyssotzki........ 49
Carl Wilhelm Scheele........ 53
The Whiskey Trust Entombed........ 55

Original Articles.

PRACTICAL PHARMACY.

How to Charge the Generator. By Thomas Warwick........ 57
Therapeutic Notes of Interest to Pharmacists. By H. M. Whelpley, Ph. G., M.D........ 59
Some Hash. By an Old Bachelor........ 60
A New Kind of Protection Bottles. By V. H. Lockwood........ 61

CHEMISTRY.

Application of Volumetric Analysis to Oil of Wintergreen. By Benj. H. Ewing, Ph. G........ 61
Solution of Bimeconate of Morphine. By Alice L. Braunwarth, Ph.G. 63

BOTANY AND MATERIA MEDICA.

The Trade in Opium. By P. L. Simmonds, F.L.S........ 64
Pitcher-Plants and Frankincense. By E. M. Holmes, F.L.S........ 67

Nut Cracking........ 71

Correspondence.

Paris Letter........ 73
London Letter........ 74
Berlin Letter........ 75
New York Letter........ 77
Chicago Letter........ 78
Menace in Cut Rates—Cheap Drugs May Prove Costly........ 79
Down with the Whiskey Trust........ 80
Decimals the Ultimate Destiny........ 80
Imports of Drugs, etc., at the Port of New York, for the Month of January, 1893........ 81

Book Reviews........ 83
Facetiæ........ 84
Abstracts and Translations........ 85
Pharmaceutical Progress........ 87
Notes and News........ 89
Trade Supplement........ 91

VALERIAN PODWYSSOTZKI.*

On the 28th of January, 1892, in Kasan, Russia, Valerian Podwyssotzki, Professor in the University and Doctor of Medicine, died at the age of 74, of croupous pneumonia.

The life and labors of the departed present much that is remarkable and interesting.

Podwyssotzki was born in 1818, in the Government of Tscheringow. His parents belonged to the nobility by birth. His ancestors were the Saxon counts of Hegdt, who had emigrated in the seventeenth century to Poland, where they became incorporated in the old Polish family of Podwyssotzki. His father, of Catholic faith, was General in the Russian service; but his mother, a Sawitzky by birth, was of the Greek church. Of the father, tradition says only that he was a very honorable man; of the mother, that she was distinguished by extraordinary energy and force of character.

Podwyssotzki received the rudiments of education under the paternal roof. At the age of 12 years he entered the Lyceum at Njeschin, in the department of natural history and mathematics. Having finished these studies, at the age of 17 he entered the University of Kiew, where he devoted himself to the study of law; then the University of Charkow, where in 1842 he completed his studies as candidate for the bar. For two theses which he presented while a student, he received the silver and the gold medal.

In spite of his preference for the natural sciences, he was compelled, on account of the traditions prevailing among the nobility, to first bend his energies to the completion of his juristic studies; but this did not prevent his assiduously attending lectures on natural philosophy. Especially interesting to him was work in the laboratory of chemistry in the University.

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* Written for the BULLETIN OF PHARMACY by Prof. Dr. Rudolph Kobert, Director of the Pharmacological Institute of the University of Dorpat.

He began his official labors in Charkow in the office of the Curator Golowkin, but he devoted all his spare time to chemical experiments in his private laboratory. After four years he left the service, and, returning to the paternal estate, fitted out a small laboratory in which he passed all his time, busy with analytical chemistry and chemical technological studies.

Toward the end of the '40's there appeared, as a fruit of these studies, an article on the manufacture of beet sugar and a new method of refining syrup by means of stearic acid. On this process he obtained from the Government a patent for two years. Many wealthy sugar-manufacturers of Russia Minor desired him to put the new method in operation in their plants.

During this time he was chosen a member of several agricultural societies, and clubs of sugar-manufacturers; but the Government appointed him member of a commission for the examination of sugar-making, the preservation of forests, and the breeding of horses.

On his own property he continually introduced the latest improvements in agricultural implements, and manured his fields with guano brought from America. However, in most instances he failed of attaining the desired result because the circumstances surrounding him were most unfavorable and the country people hostile toward his methods.

Then, toward the close of the '50's, a new current of thought in society called all the intelligent powers of Russia to work; and the young land-owner and chemist Podwyssotzki, striving after everything rational and humane, answered the call. As a prominent man in the Government, the nobles of Tscheringow chose him, in 1859, deputy to take part in the commission meeting at St. Petersburg to consider the abolition of serfdom in Russia, as planned by Alexander II.

Among the seventy-two deputies from all parts of Russia who had studied the whole system of the abolition of serfdom, Podwyssotzki distinguished himself by his independence and the originality of his views—which drew upon him, however, the displeasure of, and a reproof from, the Czar. Having returned from St. Petersburg to Tscheringow, he presented a report of his work, and by his speeches and energy caused the assembly of nobles to elect him president of the newly instituted "Palate" whose object was the measurement and division of the land between the proprietors and the newly freed peasants. This office, created only for the time being, in consequence of the abolition of serfdom (and which no longer exists), was entirely independent of the Government, and he who occupied such an office held the rank of "Civil-General." The salary was 4,000 roubles; compared with that of other officers, this was very high. A candidate was elected to the office by popular vote, but he was confirmed by the Czar.

Although Podwyssotzki was more inclined to scientific work than to public service, he as president of the Board of Adjustment devoted himself with his whole soul to the complicated work of dividing the land between the peasantry and the proprietors. To this end he mastered very quickly the whole technique of surveying, so that the numerous surveyors engaged in this work found in Podwyssotzki not only an administrator but also one thoroughly conversant with the technique of the work in hand, and consequently capable of deciding questions in dispute.

In the continual conflicts between the large landowners and those of less degree, he always stood upon the side of the latter, and thereby drew upon himself continual attacks from the wealthy proprietors, who, however, could in no manner succeed in driving the President of the "Palate" to illegal and unjust proceedings. Indeed, the bitter feeling of the magnates went so far that boxes filled with explosives and addressed to Podwyssotzki reached the "Palate" by mail. Fortunately these packages had not the evil effect intended.

Podwyssotzki was a married man and father of a family, yet he lived quite alone in Tscheringow, while his family resided sometimes on his estate and sometimes abroad. His mode of life as president of the "Palate" was extremely original. His dwelling consisted of two rooms, which were filled with books, cases, and chemicals. To that pleasure-seeking life to which the higher Russian officers are so frequently prone, he was opposed. He devoted his spare time to the study of natural philosophy and chemical work in his private laboratory. Such an administrator was a rarity in Russia, and in consequence the surrounding society considered him psychically unsound. However, the work of dividing the land was done with so much accuracy that Podwyssotzki's annual report was held up by the Ministry as a model for other departments.

Concerning Podwyssotzki's work and manner of life as president of the Land Dividing Commission in the Government of Tscheringow, there have been preserved among the land-owners many stories. If, in the measurement of land, differences arose between the owners and the peasants, and if the surveyors working subject to the control of the district president of the commission could not come to a decision, the departmental president of the commission had the right to settle the dispute by his own measurements. While in neighboring parts a requisition upon the military was necessary to settle such conflicts, Podwyssotzki never used such means. He settled the disputes in a friendly way by persuading the wealthy land-owners to a concession and by quieting the peasantry.

Now, as from the president's decree there was no appeal, we may easily imagine with what attention and loving-kindness the President was received by the wealthy land-owners. Podwyssotzki generally remained unbiassed; having arrived at the point in question, he often remained in his carriage, refusing the proffered hospitality of the land-owners, to whom he only sent his officers and surveyors. He himself, under heaven's canopy, ate his breakfast of ham and bread, and waited for the return of the gentlemen from breakfast to complete the work in hand. In his circle of intimate friends, Podwyssotzki occasionally related how he had thwarted many a wealthy man who had thought to bribe him by the seduction of elegant entertainment.

In spite of the enmity of the rich land-owners, in spite of the continual agitations against him at the elections, the majority were nevertheless on Podwyssotzki's side, and chose him for four consecutive terms, of three years each, to the same office.

But unceasing disputes with the proprietors, and the strained relations with the Administration therefrom resulting, became in time too burdensome to Podwyssotzki; they made him nervous, and caused him to give up public work and to devote himself to his favorite occupation, the study of natural philosophy and chemistry. After a quarrel with the Minister of the Interior in 1872, he resigned his office as a Counsellor of State, after having held the presidency for twelve years. Without a word to his relatives, he went to Dorpat, and there became, *at the age of 53*, a student of medicine.

When this became known, Podwyssotzki's enemies declared that he had lost his reason and that they had before this noticed evidences of imbecility in his case. Even his brother, Director of the Royal Band in Archangel, an educated man, and who had received from the Academy of Sciences the Lomonossow prize for a dictionary of the North Russian dialects, doubted seriously his brother's sanity. In May, 1872, he wrote to him, among other things, the following:

> A man must have an extremely high opinion of himself and his powers—yes, an opinion beyond a possible doubt—to take, at thy age, such an inconsiderate step, and to believe that a loss of four years' time could have other than a sterile, laughable result. . . . Until now I have to a certain degree understood you, but now I understand you no longer. . . Explain to me. . .

Of course, there was no further explanation. Podwyssotzki's proceeding seemed very extraordinary, even in Dorpat. Fellow-students and professors at first distrusted the Staats-Rath student; but as he evinced an extraordinary energy in the study of anatomy, physiology, and chemistry, and tirelessly worked in the laboratory, the preconceived opinion vanished from the minds of all. All were astonished at the immense will-power of which the gray-haired student gave evidence. The results obtained by Podwyssotzki filled the professors with astonishment. As student he wrote a work on the lingual glands in mammalia, which won the gold medal. Moreover, in conjunction with Prof. Dragendorf, he isolated sclerotic acid and other constituents from ergot.

In 1878, after five or six years of study, Podwyssotzki graduated as M.D., and immediately became Assistant at the Pharmacological Institute, and soon afterward private lecturer in the Dorpat University. Then there was a change in the opinion of Russian society concerning the *quondam* president of the Palate. In Tscheringow even his enemies admitted that he was a man of extraordinary energy; the press spoke of the old man of 58 years, the former social worker, who in his old age became for the second time a student and defended in such a brilliant manner his doctoral dissertation.

From outward appearance no one would have considered Podwyssotzki to be so old. Through his activity and tenacious memory he aroused general admiration. On account of these qualities the students of Dorpat gave him the nickname of "Devil Podwyssotzki." His diligent study of chemistry and pharmacology did not hinder him from occasionally becoming a *Bursch* in the full sense of the word, and consequently member of a club, taking part in joyous students' pursuits; so he enjoyed the universal love and respect of the student youth.

In 1882 the University of Dorpat gave Podwyssotzki the "Heimbürger" prize (1,500 roubles), and sent him abroad to further perfect himself in pharmacology. Within the time of his residence at Dorpat (until 1882) he wrote his treatise on the American cathartic Podophyllin, on Emetine, Lippia Mexicana, and Sclerotic Acid, and discovered the active principle Podophyllotoxin.

After his return from abroad he was for a time Professor of Pharmacology in the absence of the regular professor, and in 1885 the Ministry appointed him Professor in Ordinary of Pharmacy and Pharmacognosy in the University of Kasan.

He founded in Kasan a very fine pharmacognostical and pharmaceutical laboratory, and raised these branches to an eminence which had up to that time, among all the schools of Russia, been confined to Dorpat. In 1888 he opened a course of lectures on pharmacognosy, and wrote a series of critical essays in pharmacology for several journals.

Slowly, however, advanced age made itself felt. Although mentally fresh and full of power, Podwyssotzki began in the two last years to grow physically weaker. In his lectures he was lively and full of humor, but at home he felt decrepitude coming on. Nevertheless, he continued to write and to prepare for the press a couple of courses on practical pharmacology. Two weeks before his death he wrote the last pages of his work.

In the autumn of 1890 he slipped on the stone flags of the University and suffered a fracture of the hip bone, with a laceration of the ligaments of the joint. After having lain a month with fixed bandages, he continued his lectures, to which he had to be carried.

In the spring of the next year (1891) he was able to get about on crutches, and visited in the summer the mineral baths of Liptezk, where he remained until winter, when, having taken a severe cold, he was brought back to Kasan in a state of high fever and delirium. Three days later he died in great pain, recognizing no one, and regaining only a certain degree of consciousness when the attending physician said to him, "It is time to go to lectures."

Thus ended a strong man—a Titan as regards strength of purpose, perseverance, and energy. In spite of the fact that at the age of 53 he had begun to learn a new branch of science, he nevertheless succeeded in winning an honorable name, and in raising himself as well above the disadvantages of his years as in overcoming the prejudices of society. The love of learning gave him strength to renounce a desirable position and the material advantages therewith connected. The prominent traits of his private life were extraordinary modesty, justice, and a truly Spartan-like lack of pretense. Ease and comfort he never knew. Even as an old man it sometimes happened that he did not dine for days, contenting himself with tea and ham or cheese. What remained of his salary he spent upon his library, which excelled in the number of old works on pharmacology. His relatives, in accordance with his will, presented his excellent technical library to the University of Kasan. At his death he left absolutely no fortune.

An extraordinary natural endowment aside, we must certainly ascribe Podwyssotzki's unusual energy and moral strength to the circumstance that he never indulged in the use of alcoholic or spirituous beverages, did not smoke, and that he lived an extremely regular life, ate little, never overloaded his stomach, always rose between 4 and 5 A.M. and retired at 9 at night. Although father of a family, he devoted little time to home life.

One of his sons is at present Professor of General Pathology in Kiew, and has written an excellent book on general pathology, which has already been translated into German.

I myself first became personally acquainted with Podwyssotzki after I had written about ergot. He asserted that sclerotic acid caused contraction of the uterus, vascular contraction, and increase of blood-pressure; I asserted that *none of these effects were attributable to sclerotic acid.* We were thus scientific opponents; nevertheless our acquaintance was from the beginning a very friendly one. I still perfectly recollect our first meeting. It was in the Pharmacological Institute at Strassburg, of which I was at that time Assistant. Someone rang; I opened the door, and there stood before me an old gentleman whom I did not know, and who, in energetic tones and with a foreign accent, said, "I am Podwyssotzki; who are you?" To which I answered, "I am Kobert, the Assistant of the Institute." "Let me embrace you," said he, "for we are opponents in science, but we will conduct ourselves as men—yes, we will be friends." "Agreed," said I; "come now into my apartments and take tea with me." Afterwards we worked for some time together in Strassburg with Schmiedeberg, and in Dorpat Podwyssotzki frequently visited me. I shall remember him in kindness to the end of my days; and I believe that the science, also, to which we both belong, will not forget him.

CARL WILHELM SCHEELE.*

The subject of this note was born on Dec. 9, 1742, at Stralsund, which was at that time the chief town in that part of Pomerania which was united with Sweden after the peace of Westphalia, though from its position it naturally formed part of Prussia, to which it now belongs. Scheele was thus a Swedish subject, but he may be regarded as strictly of German nationality. German was his mother-tongue, and, though practically the whole of his life was passed in Sweden, he never attained any degree of intimacy with the language of the country. The accounts of his researches were invariably written in German, and had to be specially translated into Swedish in order that they might be inserted in the transactions of the learned societies to which they were communicated. His father, Joachim Christian Scheele, a respectable tradesman and burgess of Stralsund, belonged to an offshoot of a widespread and wealthy family of some note, members of which had filled prominent positions. Margaretha Eleonora Warnekross, the wife of Joachim, was the daughter of the head of a firm of brewers in the same town. They had, in all, eleven children, of whom Carl was the seventh.

The means of his parents do not appear to have sufficed to enable them to give their sons an extended academical education, for we find that after Carl had studied during three years at a private school where he was compelled to make some progress in Latin, though he never showed either inclination or aptitude for the study of languages, he was transferred to the gymnasium or public school at Stralsund. This, however, he soon left, to enter upon the serious business of life. An elder brother, Johann Martin, had been apprenticed with Martin Anders Bauch, an *apotekare* or pharmacist of Gothenburg and a friend of Scheele's family, but had died during his term of pupilage. It was found that Carl's inclination prompted him to enter the same profession, and, in 1757, when he was 14 years old, he also was put under the charge of Bauch. During the eight years he stayed here he displayed no exceptional ability, though he is described as being thoughtful and studious, as well as very punctual and precise in the discharge of his duties.

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* We are indebted for these facts concerning this celebrated man to the *Pharmaceutical Journal and Transactions*, Jan. 14, 1893.

He studied carefully such standard works on chemistry as then existed, the chief being Caspar Neumann's *Prælectiones Chemicæ*, Lémery's *Cours de Chimie*, Boerhaave's ***Elementa Chemiæ***, von Löwenstern's ***Laboratorium Chymicum***, Rothes' ***Anleitung sur Chymie***, and Kunckel's ***Laboratorium Chymicum***, the last-named especially interesting him and occupying much of his leisure time. During business hours he planned experiments to be performed in his leisure time, his practical work often extending far into the night, and, by repeating the experiments described in his books and systematically subjecting the substances around him to careful examination, he gradually acquired a considerable stock of knowledge as well as unusual skill and dexterity in manipulation. In 1765 Bauch sold his business, and Scheele left for Malmö in Sweden to engage himself with Peter Magnus Kjellström, also a pharmacist. Whilst here he continued to devote himself to his favorite science, and it is related that he once got into trouble over it. He was conducting some experiments with the pyrophorus when, a fellow apprentice having unknown to him mixed some fulminating powder with the material he was working with, an explosion occurred, and the violent detonation in the middle of the night alarmed the household. The reprimand he received did not diminish his ardor, however, but simply had the effect of causing him henceforth to conduct his experiments more cautiously.

Scheele's next engagement was with Scharenberg, of Stockholm, who kept a pharmacy at the sign of the Raven. Arriving here in 1768, he stayed but a brief time, during which, however, he completed his first research of importance, isolating tartaric acid from cream of tartar and ascertaining many of its properties, as well as those of several of its compounds which he prepared. A record of this work was sent to Torbern Olof Bergman, then Professor of Chemistry and Mineralogy at the University of Upsala, who by some mischance neglected it and returned the manuscript unread. Subsequently it fell into the hands of Anders Jahan Retzius, Professor at Lund, who recognized the importance of Scheele's results, and secured the insertion of his paper in the Transactions of the Academy of Sciences, Stockholm, for 1770, without, however, naming Scheele as the author.

In the autumn of the same year, Scheele obtained a post as chemist in the laboratory attached to the pharmacy belonging to Lokk, of Upsala. This change was made that he might take advantage of Bergman's lectures, but his excessive modesty and timidity, coupled with the soreness he yet felt with regard to the tartaric-acid incident, prevented him taking steps that would bring him in contact with the famous chemist. Accident, however, brought about their acquaintance. Jean Gottlieb Gahn, the assessor of mines at Fahlun, was at this time studying chemistry at Upsala, and, being one day at the pharmacy whence Bergman's laboratory was furnished, engaged in conversation with Lokk concerning a peculiar reaction the latter had noticed on adding vinegar to nitre after it had been heated over a quick fire. Gahn was unable to explain this, but undertook to ask Bergman, who proved to be equally ignorant upon the point. Calling to inform Lokk of his failure to obtain the desired information, Gahn found him absent, and addressed himself therefore to Scheele, who to his surprise explained the matter without any hesitation or difficulty, stating that an acid (nitrous) was given off which differed from the acid of nitre (nitric) generally known, and showing how this was brought about. As a result of this episode the two students soon became intimate, and communicated the details of their respective researches to each other; and, later, Gahn persuaded Scheele, not without difficulty, to meet Bergman, who at once acquired a strong liking for the young pharmacist. They soon became great friends, and their friendship never weakened, lasting till Bergman's death in 1784. The Professor adopted many of Scheele's views, assisted him to publish all his discoveries, and secured his election as an associate of the Academy of Sciences. It is related by Dr. Beddoes that a relative of Bergman observed to him "that the greatest of Bergman's discoveries was the discovery of Scheele."

About this time Scheele published the results of his researches on the composition of fluorspar, from which he obtained what he termed "fluor acid." This was actually, for the most part, fluosilicic acid, for the experiments had been conducted in glass vessels, and the hydrofluoric acid given off naturally entered into a fresh combination. In 1774 the results of his investigation of black oxide of manganese were published. Whilst working with this substance he obtained oxygen, chlorine, and nitrogen, in the free state, discovered baryta, which occurred as an impurity in the manganese, prepared the green and red manganates of potash and other salts, and discovered how manganese affects the color of glass. The following year he precipitated benzoic acid from its lime solution, and proved it to be identical with that produced by sublimation. He also investigated arsenic acid, studied its reactions, and prepared several of its salts; discovered arseniuretted hydrogen and the pigment since known as Scheele's green, and, later, published a process for the preparation of the latter on a large scale.

About 1775 he began to feel that more calm and quiet surroundings were essential for his work. Bergman did his utmost to detain him at Upsala, and many inducements were held out to him. In the name of the Government he was offered a professorship and the control of several factories, but all without avail. By the death of Hinrich Pascher Pohls the proprietorship of a pharmacy at Köping, a small town to the northwest of Lake Mälar, fell vacant. On Scheele's application he was nominated *provisor* of the establishment, and entered upon his duties in the summer of this year. The business proved to be in a very poor condition and hampered by Pohl's debts. By setting to work assiduously, however, and introducing an orderly system into the establishment, Scheele secured a fair share of support, and, in two years' time, was enabled to make arrangements to purchase the business, after paying off all debts. At this period he was required to submit himself for examination before the Royal College of Medicine,* and on Nov. 11, 1777, he was admitted to be registered as a pharmacist. It is stated that the College authorities, doubtless influenced by his lofty reputation, dispensed with the usual formalities in his case, and omitted the fees usually demanded on taking degrees. This would be a matter of some consideration to him; for, making it a point of honor to do his best to provide a competency for his predecessor's widow, Sara Margaretha Sonneman—for whom he soon conceived an attachment, though he would not make her his wife until he was in a better position to do so—Scheele labored under great pecuniary difficulties, from which he was never quite free for the rest of his life. He was relieved to some extent by the receipt of a grant from the Academy of Sciences, obtained for him by Bergman's influence, but he would not use more than one-sixth part of this for his personal needs, the remainder being kept to meet the expenses of his experimental work.

During the remaining nine years of his life most of his discoveries were made. Thanks to Bergman, everything he published received immediate attention; and information concerning his additions to the stock of chemical knowledge was speedily diffused amongst scientific workers. Every year two or three of his papers saw the light, each one of these recording some fresh discovery, describing new compounds, or embodying explanations of misunderstood chemical phenomena. Thus he investigated the nature of quartz, silica, clay, and alum; discovered uric, oxalic, lactic, mucic, tungstic, citric, molybdic, gallic, and malic acids; suggested new methods of making calomel, powder of algaroth, ether, and magnesia; and showed that plumbago is simply carbon with a small admixture of iron. The results of his experiments upon the proportion of pure air (oxygen) in the atmosphere accorded with those of Lavoisier; he discovered glycerin whilst working with animal fats and fixed oils; whilst in the research which is regarded as his masterpiece, and exhibits his experimental genius at its best, he determined the nature of Prussian blue, and isolated prussic acid, of which he described the composition, compounds, and properties, though he appears to have been totally unaware of its deadly character. In his treatise on "Air and Fire" he demonstrated that the air consists essentially of two gases, one of which supports combustion whilst the other does not. The former he identified with the "fire-air" he obtained from saltpetre, nitric acid, black oxide of manganese, and other substances. He endeavored to associate several phenomena with the action of this gas, particularly connecting it with the respiratory function and the growth of plants. Incidentally he prepared and described sulphuretted hydrogen, and by his experiments on the action of light upon chloride of silver and other substances he took the first step in the direction of discovering the art of photography.

He was not content merely to prepare the numerous substances he discovered, but also made every compound of these that was possible at the time, and gave detailed descriptions of the methods adopted for their production. His labors and results were the more remarkable in that he had received no training in chemistry, and in the then undeveloped state of the science could obtain but little aid from books. His ignorance, too, of other languages than German prevented him utilizing much contemporary literature. He was thus compelled to work out afresh many already published details, and was practically obliged to do everything from the beginning, his entire work being thus of necessity original in the fullest sense of the word. The lack of suitable apparatus, even in the great laboratories connected with the universities, was then very great, whilst Scheele, far from every centre of instruction and without the scanty resources of science that did exist, had practically nothing in the shape of accessories except such as he could contrive for himself. However, in the midst of the detail work of his daily round, he devised ingenious apparatus destined to elucidate the most abstruse and difficult problems in chemistry. In many respects he resembled our own Faraday, and particularly in the simplicity of the means he employed as contrasted with the importance of the results he obtained. It is stated that a furnace, alembic, sand-bath, crucible, some phials, ordinary tumbler glasses, and a few bladders to contain gases, constituted his laboratory. With these he was able to discover and investigate gases, metals, acids, and many other substances. Working at a time when a veritable revolution was taking place in chemistry, when the labors of Black, Cavendish, Priestley, Bergman, Berthollet, Lavoisier, and others, were all tending towards setting it upon a more exact basis, Scheele brought to the new scientific edifice a tribute of numerous experiments and facts deduced therefrom. He thus added considerably to the riches of the science and aided in the establishment of important new doctrines. In his power of experimental research he probably has had no equal but Faraday. Naturally endowed with the true scientific instinct, he also possessed unwearied patience and gave an undivided attention to his work, for the study of science to him was both work and relaxation.

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* In Sweden the superintendence and inspection of medical and pharmaceutical establishments are in the charge of a Medical College, the members of which are nominated by the King. *Apotekares* or pharmacists must register the names of their apprentices at the College and provide for instruction in botany, chemistry, and pharmacy, during the years of apprenticeship, at the expiration of which an examination is undergone which entitles those who pass to act as assistants. After serving awhile in this capacity, attendance on courses of lectures, practice in a laboratory, and a satisfactory private trial of capacity by the professors, are insisted upon before admittance to an examination conducted before the Medical College. This passed, the examinee must take an oath to comply with the laws and regulations affecting pharmacy, after which he is granted a diploma as "Provisor and Apotekare," and is entitled to purchase a business if one should be vacant, or to be nominated to a new one if it should happen to be required in any district.

At the same he omitted no share of his ordinary professional duties, and, seeing that he was also continually worried by the difficulty of fulfilling the obligations he had entered into with regard to the purchase of the business, it is little wonder that he was prematurely assailed by infirmities, prominent amongst which was rheumatism induced by the draughts to which he exposed himself in his devotion to night-work. His strength being exhausted by long years of privation and self-neglect, he succumbed within two months when his disorders culminated in what proved to be the fatal attack. On his death-bed he fulfilled the resolution he had previously formed, marrying the widow of his predecessor, that he might leave her his name (thus entitling her to benefit by the after-disposal of his pharmacy) and the small savings he had accumulated. He died two days afterwards, on May 21, 1786, at the early age of forty-three years.

Scheele's discoveries are described as being invariably the outcome of carefully planned experiments, intended to test theories he had previously formulated. By thus excluding all haphazard experiments, he economized time, material, and labor, attaining conclusions more speedily and without unnecessary complexity of the means to be employed. His one aim in life was the experimental discovery of truth in nature, and his accuracy is described as unrivalled, considering his position and the means at his command, whilst the work he executed left hardly anything to be added to it, being "as thoroughly well done as it is in the power of an all-conscientious man to do." Dumas, whose opinion is of considerable value, asserts that "whenever it is a question of facts, Scheele is infallible. He rose to the highest rank he could attain by work, experience, and thought, without the aid of any scientific education. Whether he could have risen higher, I know not; still, when it is commonly said that in order to work for the advance of science it is necessary to live in the great university centres, and not in the atmosphere of provincial life, we cannot help turning our thoughts on Scheele and Köping."

To those connected with pharmacy who are apt to disparage their craft, it may be pointed out that Scheele was from first to last a pharmacist, despising all preferment and remaining unaffected by any distinctions conferred upon him. We are told that he refused the invitation of the King of Prussia to settle at Berlin, as well as the offer of an easy and lucrative position made by the then Government of England. The Academies of Berlin, Erfürt, and Turin, and the Royal Society of Medicine at Paris, were eager to admit him to share the privileges they enjoyed, but, preferring the comparative freedom of a humble pharmacy in an out-of-the-world corner, he "made chemistry transcendent in his back shop with medicine phials and retorts, as Pascal discovered the theorems of geometry without other instruments than compass and rule."

A statue, by Börjeson, to Scheele's memory, representing him as engaged in experimental work, and with the instruments of his craft around him, was erected by the Swedish people, and formally unveiled on Dec. 9, 1892, that being the one hundred and fiftieth anniversary of his birth.

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THE WHISKEY TRUST ENTOMBED.

Time the Tomb-Builder holds his fierce career, dark, stern, all pitiless, and pauses not, amid the mighty wrecks that strew his path, to sit and muse. like other conquerors, upon the fearful ruin he has wrought.

It has not taken long for old Father Time to entomb the Whiskey Trust which spread its tentacles so as to grasp pharmacy and other arts by the throat, by raising the price of distilled spirits for the use of manufacturing medicines and for the arts, 100 per cent. and attempted to raise it still higher.

The universal protest against this wholesale robbery has awakened not only the pharmaceutical press, but public opinion at large, as to the evil plans of this octopus which would attempt to squeeze the life from the trade of pharmacy, but which has, it is to be hoped, met its final doom.

The bill, entitled H. R. 9829, introduced in the House of Representatives by Mr. Scott, of Illinois, to increase the internal-revenue tax on spirits from 90 cents to $1.25 per gallon, has aroused the ire of all reputable trade organizations and combinations which would be affected by the adoption of such a measure—a measure practically amounting to conspiracy between the Government and the "Trust" to fleece the consumers of alcohol and to kill competition in the production of this necessary article.

In the protest against the passage of this bill, the Drug Trade Section of the New York Board of Trade and Transportation has gathered most solid and convincing facts as to why such an outrage should not be perpetrated:

"This corporation has advanced the price of alcohol 40 cents per gallon, *an increase of 100 per cent.* (excluding the tax), although neither corn nor any of the other materials used it its production, nor the labor employed, has materially increased in cost during this period.

"At the present price of corn the known cost of production of alcohol is but 25 cents per gallon; the lowest selling price of the Distilling and Cattle Feeding Company, to the largest buyers, is $2.64 per gallon, which, deducting the internal-revenue tax and the conditional rebate allowed by them, leaves a net selling price of 81 cents per gallon; from this price make a further deduction of 11 cents per gallon for cost of barrel, freight, interest on money paid for tax, and selling expenses (surely a liberal allowance), and the absolute net price obtained at the distillery is 70 cents per gallon for an article costing 25 cents, or a *profit of 180 per cent.*

"Competent authorities, among them Dr. E. R. Squibb, estimate that at least one-half of the total production of cologne spirits, high-wines, and alcohol is consumed in the arts and manufactures. How can the chemical and pharmaceutical manufacturers, and the hundreds of other manufacturers who employ alcohol, the "almost universal solvent," prosper while paying the enormous annual tribute of more than *six million dollars* to this grasping monopoly?

"*Competition with foreign manufacturers, on the part of American manufacturers of chemicals and pharmaceutical preparations, is made utterly impossible by the recent increase in the cost of alcohol, which enters into the manufacture of almost every article in their catalogues.*

"Not satisfied with even the present enormous earnings, the Whiskey Trust (as the Distilling and Cattle Feeding Company is rather illogically known) seeks to still further augment its profits by having Congress increase the tax from 90 cents per proof gallon to $1.25, or from about $1.70 per wine gallon to about $2.37; *and to prevent such action on the part of Congress is the purpose of this protest.*

"The basis for its hopes in this direction is the supposed need of the Government for more revenue.

"The present internal-revenue tax, onerous as it is, has been in force for eighteen years, and manufacturers have accommodated themselves to it, have arranged their business according to it, and have become accustomed to its workings. An increase in the tax, however, would not only compel the public to pay higher prices for indispensable medicines, and other products, but would unsettle business, disarrange long existing conditions, and bring confusion and harm to a great many important branches of industry, without corresponding benefit.

"Further, it would of itself defeat its ostensible purpose, for any material increase in the price of alcohol will inevitably bring about the use of cheap and harmful substitutes, and thus curtail the consumption of alcohol and diminish the revenues of the Government, besides resulting in harm to the general public from the use of inferior and perhaps deleterious substances.

"Again, in the expectation that Congress would increase the internal-revenue tax, enormous quantities of spirits have been bought and are kept in bond by speculators, said to be chiefly persons connected with the Trust, so much so that the Trust has kept its distilleries going day and night to supply this demand. This stock is of course only subject to the present tax, and in the event of an increase the only ones to be benefited would, for a considerable period, estimated as high as two years, not be the Government, but the Trust, and its friends the speculators.

"*The Drug Trade Section of the New York Board of Trade and Transportation is therefore unalterably opposed to any bill tending to increase the present internal-revenue tax on alcohol.*

"The only measure of relief which Congress can bring to bear towards limiting the exactions of the Trust, is a reduction of the customs duty on alcohol. The present duty is $2.50 per proof gallon, equal to $4.70 per wine gallon; this duty is prohibitory, and the Government does not derive a dollar of revenue from it. If this import duty were reduced to a rate approximating the internal tax, there would then be a limit beyond which the Trust could not advance its price without inviting foreign competition; for instance, if the import duty were $1.00 per proof gallon, the difference between the internal and the customs tax would be 18⅘ cents per wine gallon, surely sufficient protection for an article costing 25 cents to produce, and yet an absolute bar to extortion beyond this limit."

The National Wholesale Druggists' Association and the Philadelphia Drug Exchange have added their emphatic protest to others, and it looks as if the monster which expected to nourish itself on the breast of virtuous and reputable business were likely to die from the reaction following its extraordinary exhibition of "nerve."

The American idea of freedom from the enthralment and oppression of monarchical countries cannot long tolerate any usurpation or abuse of power which has for its object the aggrandizement of the few at the expense of the rights of all to the life, liberty, and happiness which the establishment of this nation has made practicable.

PRACTICAL PHARMACY.

HOW TO CHARGE THE GENERATOR.

BY THOMAS WARWICK.

In my last article I gave some facts and figures in regard to the chemical transformations which take place in the manufacture of soda-water. These are all very well in their way, but they are incomplete without a knowledge of the practical method of combining the ingredients. Theory is an excellent tool, but one must know how to handle it. A man may have a thorough knowledge of all the principles of art, and yet be unable to paint a picture. So it happens that men who have spent a life-time in discovering general principles would often be the most ill-suited for carrying them out in general practice. It is not the theory which is at fault, as we are prone to believe; it is the man who tries to use it.

Now, in charging a generator, it is advisable to thoroughly understand the chemical changes that are taking place, but it is even more necessary to know the insignificant details as to the best method of working off a charge, for without this the best chemist will obtain poorer results than an ignorant workman familiar with the processes.

There are three great dangers to be avoided in charging a generator. The first is the danger of getting too high a pressure; the second, the collapse of the generator- or fountain-linings; and third, the caking of the marble-dust or spent material either on the agitator or on the walls of the generator.

As to the first trouble, as the rise of pressure in the generator can only take place when the sulphuric acid and marble-dust are mixed, it follows that everything depends on letting the one down to the other with sufficient slowness.

When marble-dust is used, there is less danger from this source than when either whiting or bicarbonate of soda is employed. Both of these are acted upon much more quickly by the acid, and with the bicarbonate of soda the production is particularly rapid, since this compound liberates about twice as much gas as the same weight of marble-dust.

Even with marble-dust, the rapidity with which the gas is evolved depends in great measure upon the degree of fineness to which the marble is ground; and it has been found that, all things considered, a somewhat coarse grade is to be preferred to a fine one.

In all forms of generators on the market, the acid and the carbonate are placed in two chambers, one above the other, and the upper ingredient is then gradually let down into the lower one. It is right here that the principal trouble arises. In the first place, there is great danger of a leak—and this is especially the case when it is the acid which is placed in the upper chamber. Sulphuric acid is such a corrosive fluid that lead is the only cheap metal that will stand its action, and hence the joint between the acid chamber and the generator body is made by means of a lead-covered plug fitting into a lead-lined recess. By pulling out this plug the sulphuric acid is allowed to flow down upon the marble, while by closing it again the flow of acid is stopped. It must be confessed that this acid plunger is a most crude contrivance, but, although many attempts have been made to devise something better, it still holds its own, and bids fair to do so for years to come. It will be readily understood that the soft lead in course of time becomes considerably battered, and that the acid will then leak through into the generator body. The consequence will be, if the leak is of appreciable size, that the pressure in the generator will rise faster than is desired, and this will produce trouble in two distinct ways.

In the first place, it will increase the strain on the generator, and, if it rises too high, may produce an explosion unless the generator be in good condition and provided with reliable safety attachments; but even if so provided, the entire charge will be wasted, and the floor will be littered up with the refuse materials shot out from the generator.

This is what will happen in extreme cases, but when the pressure is not great enough to pass the safety limit it nevertheless causes another very annoying trouble, technically known as "priming." This priming consists of a kind of boiling-up of the materials in the generator through the too sudden generation of carbonic acid gas, and in this boiling-up a portion of the acid and marble-dust is carried over into the gas-washers, choking up the pipes and contaminating the water in the fountains.

I have heard it gravely contended by persons in the soda-water business, that unless some sulphuric acid spray found its way over into the water the beverage would be deficient in pungency, but I must confess that personally I prefer my drinks plain.

Fortunately a serious leak in the acid chamber does not often occur, and, when it does, it manifests itself so rapidly that the druggist can be on his guard against it while running off the charge, and can then have it attended to before next charging time.

Where the principal trouble arises is in the carelessness of the operator. Wishing to abridge, as much as he possibly can, the work of charging, he lets down a great deal of acid at a time, and in his eagerness is apt to allow too much to pass, forgetting that the pressure which the gauge shows at the moment will rapidly rise as the acid and marble combine, even after he has closed the valve again. Hence, the importance of letting down the acid by very small amounts at a time cannot be too strongly insisted upon.

With what are known as carbonate-feeding generators, in which the marble-dust is placed in an upper chamber and allowed to fall down into the acid, leakage is not so liable to occur, but there is in this case another closely allied danger to be apprehended. It is that, as the handle of the agitator at the same time serves to close the partition between the marble-dust and the acid, if the handle should by any accident become twisted the partition will not completely close, and too much marble will fall down into the body of the generator, causing a sudden rise of pressure. The only way to avoid this danger is to look carefully at the diaphragm before putting in the charge of marble. By fastening a lighted candle to any convenient piece of wire, and lowering it through the upper bung, the interior of the generator can be easily examined, and the operator can make sure that the diaphragm is completely closed before he attempts to put his materials into the generator.

As regards the second danger of which I have spoken, namely, the collapsing of the linings of the generator and of the foutains, this is perhaps the most important of all, but it is the one to which the druggist should pay the greatest heed, for the reason that it is somewhat difficult to realize just where the trouble arises, as the effects are seldom apparent to the operator in any way until after the damage is irretrievably done. This collapsing of the metal linings is so complicated a subject, while yet so important, that I shall be obliged to treat of it in a special article; but I may briefly state here that this collapsing is impossible so long as the pressure inside the vessel remains as great as or greater than the pressure outside.

We come now to the third point, that is to say, the danger of the materials caking in the generator. To the uninitiated it would seem as though a substance like ground marble could not give any trouble by caking, either before or after it has been deprived of its gas, but as a matter of fact this caking occurs continually. It is the exception, rather than the rule, for a generator when opened to be perfectly free from caked materials, and in most of the cases the marble is caked so hard that it can only be removed by the use of a mallet and chisel.

It may be asked what objections there can be to the marble caking in the generator; but this question almost answers itself. In the first place, it becomes very difficult to discharge the spent materials; secondly, there is danger of the agitator being injured by striking against these caked materials; and, third, the capacity of the generator is considerably reduced, necessitating more frequent charges, and increasing the danger of boiling-over already spoken of.

Now it is a common mistake to imagine that this caking occurs only with the spent materials in the generator. Ordinary marble-dust that has not been acted upon at all by acid will cake readily and form a hard mass; and there is, curiously enough, more trouble to be apprehended from this source than from the spent materials.

Consequently, simple as seems the operation of putting the marble-dust into the generator, it requires to be done *just so*, in order to prevent the marble from caking upon the agitator or upon the generator lining.

The first principle to be borne in mind is that the water must be put in before the marble-dust, for if the marble were put in first and the water were afterwards poured upon it the marble would cake fast to the lining.

The second point to remember is that the marble should be let into the generator a little at a time, and the agitator should be slowly turned while it is falling in, so as to mix it well in with the water and distribute it throughout the body of the genreator. This, moreover, prevents the marble-dust from settling, or from forming into lumps—a contingency that, while not so vexatious as the caking proper, is still disagreeable in more ways than one.

It is safe to say that the majority of druggists pay no heed whatever to these simple precautions; instead of seeing that the agitator-blades are vertical before commencing to let down the marble-dust, and then taking pains to keep the blades revolving during the fall of the carbonates, the majority leave the agitator in whatever position it finds itself, usually with the blades horizontal, and then pour in the entire charge of marble-dust at once. They are afterwards surprised to find that their agitator, without any apparent cause, becomes encrusted with a coating of marble that gradually forms a veritable snow-ball. Moreover, a thick layer of marble adheres to the lining—a layer which all their efforts fail to remove—and they are obliged as a last resort to take their generator apart and treat it to a dose of hammer, chisel, and elbow-grease, for two or three hours, at the end of which time either the generator will be clean, the operator tired out, or the lining so badly damaged it can never be used again. The last case is the most frequent.

The fact that marble-dust will cake more rapidly than the spent materials in the generator, requires attention for another reason, namely, that if too great an excess of marble is used in making the charge the trouble from this source will be considerably increased; hence it is well to conform as much as possible to the proportions I gave last month. With a poor marble-dust, of course the quantity can be increased somewhat. Whether or not the charge of marble can be increased, will readily be seen by examining the spent materials. If the residue gives a strong acid reaction, this will indicate that the sulphuric acid has not all been neutralized, and hence a larger quantity of marble can be safely used at each charge.

One last point remains to be considered in regard to inserting the charge of marble-dust into horizontal generators, namely, that the gas should be generated as soon as possible after the marble has been put in. The reason for this is that the gas generated seems to permeate the mass like yeast, and so prevents the particles from caking together so easily. It is for this reason that a generator left under pressure will sometimes remain for a considerable time without caking, whereas if the marble-dust and water alone were left in the generator the operator would find matters in a pretty state upon his return.

Although, as we have seen, the marble is more liable to cake than the spent materials, yet the troubles from the latter source are not to be underestimated. In my last article I explained how great was the danger of caking from the soluble sulphate of magnesia formed. Fortunately, as I stated, this trouble can be almost entirely obviated by using a sufficient quantity of water in making the charge.

Having now considered the pathology of "caking," perhaps it may be well to say a few words in regard to the cure of this disease. If taken in its earliest stages, the remedy is not very difficult. Whether the marble or spent materials are caked to the generator lining, to the agitator, or have caked together in lumps, the remedy is to pour a couple of pints of acid and the same amount of water into the generator body, and stir the agitator around briskly. Sometimes, if the marble has not caked hard, it can be removed by playing upon it with a hose.

If these mild measures fail, however, the druggist will be obliged, as before stated, to take the generator apart and scrape it clean, using a mallet and chisel for this purpose if nothing else will answer. Great care must be taken, however, not to injure the soft lead lining.

On the whole, I would say that it is not a difficult matter to charge a generator properly. It is, in fact, almost as easy as discovering America. All that is required is to know how to do it, and then to do it that way.

THERAPEUTIC NOTES OF INTEREST TO PHARMACISTS.

BY H. M. WHELPLEY, PH.G., M.D.

Creasote in tuberculosis is by no means a new remedy, but it remained for Dr. Penrose to give it a thorough trial in one hundred cases of phthisis. He is well pleased with the results of the trial, and lays special stress on the fact that pure beechwood creasote should be administered. Pharmacists should always be careful to dispense the proper article when creasote is prescribed.

Vaccination against cholera is the result of a theory advanced by Dr. R. B. Leach. Arsenic is the substance used for the vaccination. We have no faith in the Doctor's claims, as his theory is based solely on the fact that the symptoms following arsenic poisoning are similar to some of those accompanying cholera. The Doctor was evidently hard up for a theory.

Vomiting sometimes becomes an alarming as well as a very disagreeable trouble. Some one has recommended the following to control the sickness:

Menthol	30 grains.
Alcohol	4 fluidrachms.
Syrup	3½ fluidounces.

The dose is a teaspoonful every hour until the desired result is obtained.

Always sleep with the head to the north, is the advice given by Dr. Hubbard in the *Medical Summary.* The Doctor claims that he has never seen the command in print before. Perhaps he has not, but the ignorant classes in many sections of the country follow the practice without reading about it in print. There is much more wisdom in the same author's assertion that it is better for people to sleep on their side than on their back.

Burns are accidents which demand prompt attention. A writer in one of the French medical journals recommends the following:

Tannic acid	2½ drachms.
Alcohol	2½ fluidrachms.
Sulphuric ether	2½ fluidounces.

This solution is to be applied to the burnt surface; the parts should then be covered with cotton wadding.

Disinfecting the intestines may sound rather odd, and still be a rational medical procedure. A writer in the *Medical Progress* recommends the following pill for the purpose:

Creolin	3 drachms.
Dilute alcohol	30 minims.
Powdered gum tragacanth	30 grains.
Liquorice juice Powdered liquorice } of each	q. s.

Make twenty pills.

The dose is two pills two or three times a day. It now remains for some one to get up a pill to disinfect the stomach of those who inflict a disagreeable breath upon their friends.

Sore nipples are said to yield to a repeated application of equal parts of bismuth subnitrate and castor oil. Such a mixture would not injure the small babe, even if some of it were swallowed in nursing.

A disinfectant for the hands is made by Dr. Kelly of permanganate of potassium and oxalic acid. The Doctor neglects to state that oxalic acid is a fearful poison and should always be used with caution.

"*To Stimulate the Appetite*" is the heading of an article in the *Pittsburgh Medical Review* which gives the following prescription:

Dilute phosphoric acid	4 fluidrachms.
Dilute nitro-hydrochloric acid	4 fluidrachms.
Aromatic sulphuric acid	4 fluidrachms.
Tincture of chloride of iron	4 fluidrachms.

The dose is 30 drops in clear sweetened water; it should be taken during meals. This is rather an unusual mixture of acids, and it would be difficult to figure out the exact physiologico-chemical action of such a dose, but Dr. Thos. J. Mays says it is just the thing to stimulate the appetite in cases of pulmonary consumption.

Croup is treated by Dr. N. S. Davis with half-teaspoonful doses every three or four hours of the following mixture:

Syrup of ipecac	9 fluidrachms.
Compound syrup of squill	1½ fluidrachms.
Paregoric	2 fluidounces.

How long should a convalescent from diphtheria be isolated, is answered by Dr. Prince in the *Boston Medical and Surgical Journal.* He says that one week is the proper length of time, and states that his assertion is based upon experience.

Castor oil that children cry for, and that older people will take without making a disagreeable face, is, according to the *Medical Journal*, prepared as follows: "Treat the best grade of castor oil with hot water repeatedly, then add enough saccharin to give it a syrup taste. A minute quantity of the aldehyde of cinnamon oil and of vanilla flavoring will cover any remaining disagreeable flavor." This process is said to impair neither the efficiency nor permanency of the oil.

Painful gums in children are often the direct cause of spiteful dispositions in older people. As a remedy a French medical journal recommends that the gums be rubbed with the following:

Hydrochlorate of cocaine	1½ grains.
Powdered camphor	1½ grains.
Glycerin	3 drachms.
Peppermint water to flavor.	

Mix.

Erysipelas, according to Prof. Hair, should be washed with a solution of bichloride of mercury and rinsed with pure water before applying the following ointment:

Ichthyol	1 drachm.
Vaselin	1 ounce.

The Doctor advises the internal administration of large doses of tincture of chloride of iron in conjunction with this external treatment. According to the *Brooklyn Medical Journal*, Luecke prefers the application of rectified oil of turpentine; this should be applied several times a day, and the turpentine rubbed by means of a brush from the healthy to the diseased tissue; the parts should be protected from the atmosphere by means of cotton between the applications. He also cleanses the parts thoroughly with ether or alcohol before applying the turpentine.

Even ointments are not free from bacteria, according to Koch, who has demonstrated that germs may be cultivated in such media.

Hypodermic needles, says the *Medical and Surgical Journal*, can be rendered sterile if submerged for three or five minutes in boiling water immediately before using them.

Typhoid fever was treated with one-drachm doses of a one-per-cent. solution of chloroform, with good results, in 130 cases reported in the *Medical Brief.* The remedy should be administered about every two hours.

Antipyrin may produce a rise in temperature, says Dr. Lepine in a French medical journal. He speaks of this as a contrary action of certain drugs. We might add that it is also an exceptional and unexpected action.

SOME HASH.

BY AN OLD BACHELOR.

It has been observed that the man who considers himself "one in a thousand" generally, and quite naturally, regards others as mere ciphers.

⁂

Have you ever seen a druggist accidentally pull a label drawer out of its frame and empty its contents on the floor?—!—!!—!!! * * * Such a "mix up" can be prevented by means of a strap or a block of wood fastened to the back of the drawer.

⁂

Not long ago the *Druggists' Circular* mentioned a very peculiar and interesting incident in connection with a fire that happened in a drug milling establishment. Along with the rest of the salvage were unexpectedly discovered eight or ten barrels of wheat flour. Parties who ought to know, say that the proprietors of this drug mill were not in the habit of grinding wheat, neither did they run a bakery in connection with their mill, and it is hardly probable they would want such a large amount of flour at one time to make paste with which to attach labels to packages. * * * With this in view, pharmacists are advised to examine powdered drugs carefully when new supplies are received.

⁂

The New Idea states that an Indiana man recently asked his druggist for "half a pound of salts of lemon," and that, by dint of questioning, the cautious pharmacist learned that the substance was to be used for making *lemonade.* This is offered as evidence that we must be constantly on the alert to avert disaster.

On several occasions I have noticed that druggists inadvertently place malt extracts upon upper shelves where heat accumulates, or directly in the current of hot air from a stove or furnace. * * * Such perishable goods should be stored in a cool place.

⁂

A correspondent in the *American Druggist* says: "I have greatly enlarged my business in the past two years by introducing a 10-cent counter. On this counter I place a good many articles that I can sell at a profit for 10 cents. Here you can find sponges, boxes of cough-drops, several good brands of soap, boxes of stationery, bottles of cheap perfumes, pocket-books, memorandum books, combs, brushes, etc." * * * I am not prepared to say that a permanent "10-cent counter" is a desirable feature in a pharmacy, but it seems plausible to dispose of damaged sundries, old patent-medicines, and other substances which gradually accumulate and constitute the "dead stock" to be found in almost every drug store, by placing them upon a temporary bargain-counter with prices marked in plain figures. * * * If successful, the department could be made permanent.

⁂

A daily paper recently suggested that there is a fortune in store for the druggist who will produce some patent medicine capable of stimulating the salivary glands, since the Columbian stamps have come into general use.

⁂

On several occasions glass labels have been observed to drop off shelf bottles as the result of exposure to a low temperature. * * * Probably from contraction of the adhering cement.

⁂

A controversy recently arose between several pharmacists concerning the injuring of perfumes by "freezing." * * * The question was referred to several perfume experts, and every one replied that perfumes congealed by exposure to a low temperature would clear up again when placed in a warm atmosphere, and remain uninjured so far as odor is concerned.

A NEW KIND OF PROTECTION BOTTLES.

BY V. H. LOCKWOOD.

The American Protection Bottle Company, of Marion, Ind., has become the owner of three inventions relating to protection bottles, made by M. N. and E. P. Lynn, of Rising Sun, Ind.

What is meant here by protection bottles is, that the bottle is so made and so sealed that the contents cannot be emptied without breaking the bottle, or breaking off the cap in a manner to show clearly that the bottle has been emptied of its original contents and is not in its original form. One of these bottles has an extension above the ordinary mouth of the bottle and above the cork; this extension, which is a continuation of the neck, is so made that it can be readily broken off the neck of the bottle just above the cork and the usual reinforcement about the neck of a bottle. On this extension is fitted a cap, which is properly sealed and rendered irremovable without breaking off the extension. After the original contents have been used, no one can deceive anybody else by filling the bottle with an inferior or a different quality of the same kind of goods, and palming it off on the public as of equal value and virtue as the original contents, as the top of the bottle will show the mutilation because of breaking the extension off; yet if anyone should desire to use it for other purposes, he can use the remainder of the bottle, which is in the usual form.

Another of the bottles has, instead of a breakable extension on the neck, a breakable flange about the mouth or neck of the original bottle. Fitting over this breakable flange is a sectional cap, which, after the sealing material is put in the cap and it is fitted together over the breakable flange, is entirely irremovable without removing the breakable flange; this is done by simply striking the cap a blow from beneath it.

The third bottle does not make the neck of the bottle breakable in any way, or have a breakable flange thereon, but, instead, has a cap whose top is breakable, the top of the cap being so fitted to the body of the cap that a blow in the proper place will knock off the top of the cap, leaving the body of the cap adhering tightly to the neck of the bottle.

All of these bottles are sealed so that the sealing material cannot be reached without mutilating the bottle, as stated. They are being received with great favor by all manufacturers of medicine and mineral waters who desire to prevent any simulation of their goods, and for these purposes are undoubtedly of great value and thoroughly successful.

Indianapolis, Ind., Jan. 30, 1893.

CHEMISTRY.

APPLICATION OF VOLUMETRIC ANALYSIS TO OIL OF WINTERGREEN.*

BY BENJ. H. EWING, PH.G.

The composition of oil of wintergreen and its well known commercial substitute, oil of sweet birch, has been the subject of repeated investigation, the tendency of which has been to prove the constituents of the two oils to be identical, or the existence of a slight difference in favor of the birch product, as being a more nearly pure representative of absolute natural methyl salicylate; yet, to the author's knowledge, no easy method has been proposed for the use of the pharmacist in estimating the salicylic value of the article before making a purchase in the market.

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*Under supervision of Wm. Simonson, Ph.G., Chemical Laboratory, Cincinnati College of Pharmacy.

Being composed of a definite chemical compound, the deportment of which with alkalies is well defined, there remains no reason why volumetric analysis should not be applied for this purpose.

With a view of proving the feasibility of such a method, in January of the present year the writer obtained two genuine specimens (one oil of gaultheria, the other oil of sweet birch) through the kindness of C. M. Driggs, of White Haven, Pa., who has furnished other investigators with authentic specimens of these oils. These, with a specimen of the commercial oil obtained from a prominent dealer, were first subjected to a gravimetric assay according to the following process:

A small, convenient quantity (1.5 to 2 grammes) was weighed in a tared flask of 50 c.c. capacity, a slight known excess of a strong solution of soda added, the flask securely corked, and the contents rotated over a moderate heat until the disappearance of the precipitate formed by the soda solution. After cooling, the cork was removed, and the liquid again subjected to heat for five minutes, this time at the boiling-point, after which it was transferred to a separatory funnel, where it was treated with a slight excess of hydrochloric acid, and the precipitated salicylic acid taken up by shaking the resulting mixture with two volumes of ether. After subsidence, the aqueous stratum was drawn off into a second separator and shaken with two volumes of ether; again drawn off into a third separator, after subsiding, and shaken with one volume of ether; when, upon resting, the aqueous solution was finally drawn off, found to be free from salicylic acid, and rejected.

The ethereal solutions in the separators were then washed in succession, four times, each time with two volumes of distilled water, to free them from sodium chloride. That in the first separator was transferred to a tared platinum dish, as was that in the second after passing through the first, and that in the third after passing through the second and thence also through the first. The ethereal liquids were carefully evaporated, and the residue dried over sulphuric acid to a constant weight.

W. Simonson was kind enough to verify each estimation made by this method.

A plan for volumetric estimation was now devised, which, in outline, consists in saponifying a weighed portion of the oil with an excess of normal solution of soda, and neutralizing the excess with normal hydrochloric acid, and in detail as follows:

Weigh 5 grammes of the oil in a tared flask of 100 c.c. capacity, and pour upon it 40 c.c. volumetric solution of soda. Cork the flask securely, and heat the contents at 60° C. until the precipitate formed at first has totally disappeared. Cool; remove the cork; and again apply heat—this time at the boiling-point, and for five minutes. Again cool; add enough solution of phenolphthalein to impart a red color, and then enough normal hydrochloric acid to render the liquid neutral, as will be sharply indicated by the disappearance of the red color. Subtract the volume of acid required from 40, and multiply the remainder by .138 (one-thousandth of the molecular weight of salicylic acid), and the resulting product by 20, to get the per cent. of salicylic acid; or multiply the remainder by .152 (one-thousandth of the molecular weight of methyl salicylate), and the resulting product by 20, to get the per cent. of methyl salicylate.

This method was applied to each specimen of oil, the following table showing the results compared with those obtained by the gravimetric method:

GRAVIMETRIC.

Specimen.	Salicylic Acid.	Methyl Salicylate.
1. Genuine oil gaultheria......	89.56 per cent.	= 98.65 per cent.
2. Genuine oil sweet birch.....	90.54 "	= 99.72 "
3. Commercial oil wintergreen.	90.65 "	= 99.85 "

VOLUMETRIC.

Specimen.	Salicylic Acid.	Methyl Salicylate.
1. Genuine oil gaultheria......	90.15 per cent.	= 99.30 per cent.
2. Genuine oil sweet birch.....	90.20 "	= 99.40 "
3. Commercial oil wintergreen.	90.15 "	= 99.30 "

Three more specimens of the commercial oil, obtained from different manufacturers of natural salicylic acid, were estimated by the volumetric method, one of which proved to be absolute methyl salicylate, the other two 99.10 per cent. and 99.50 per cent. respectively.

This method has since proved effectual in one instance in detecting an oil offered for sale by a traveling broker, which contained but 68 per cent. of methyl salicylate.

Ewingville, Ohio, May, 1892.

SOLUTION OF BIMECONATE OF MORPHINE.*

BY ALICE L. BRAUNWARTH, PH.G.

Although this preparation of opium has been in great favor for many years, no positive formula for its preparation nor standard for strength exists in any authoritative work. In view of these facts the work was undertaken, and the following data obtained. At the outset it became necessary to decide upon a precise method for the estimation of morphine, the preliminary trials being made upon a commercial specimen of sulphate of morphine:

Water, by drying at 140° to 160° C.

H_2SO_4, as barium sulphate.

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* Under supervision of Wm. Simonson, Ph. G., Chemical Laboratory, Cincinnati College of Pharmacy.

Morphine, by separation from a strong aqueous solution of ammonia, and purification by amyl alcohol.

Results.

		Per cent
Water: 1.0372 lost at 140–160° C. 0.1145 H_2O	=	10.04
Sulphuric acid: 0.6797 produced 0.2110 $BaSO_4$	=	13.06
Sulphuric acid: 0.9607 produced 0.2980 $BaSO_4$	=	13.05
Morphine: 0.2644 produced 0.2011 $C_{17}H_{19}NO_3$ dry at 110° C.	=	76.06
Total		99.16

On applying amyl alcohol to morphine estimations, several practical difficulties were encountered. Very much more of the solvent is needed than would be supposed from the stated solubilities of the alkaloid. Thus Prescott states that solubility is 1–97, but in precipitation it was found to be soluble in about one-third that quantity, yet readily crystallizing from this solvent, and when equilibrium was established the solubility was found to be 1 in 160–200. Secondly, the high solubility of the solvent in water requiring repeated washings. Thirdly, extreme slowness of evaporation.

Conclusion.—While amyl alcohol is necessary in rigidly accurate morphine estimations, it is practically useless when a large number of estimations are made, owing to the labor and time attending its use.

Ethyl acetate is free from these objections, and yet defective owing to its deficient solvent power of the alkaloid, requiring 600 parts for 1 of alkaloid.

Under such conditions the ammonia precipitation was resorted to, and the following factors considered:

First. Solubility in water of the alkaloid, and in slightly ammoniated liquid resulting from the precipitation.

1st. In water.

Morphine 2.00 shaken for twenty-four hours with 50 c.c. water, filtered in a filtering tube through a small plug of well cleaned asbestos, a weighed portion of the clear filtrate evaporated to dryness in a tared platinum dish, and drying at 100°–105° C.

Result, 0.0178 $C_{17}H_{19}NO_3$. Solubility, 1 part morphine in 1806 parts of water.

2d. *a.* Morphine 0.3311, dry at 110° C., dissolved in little water with the least possible excess of hydrochloric acid, diluted to 20 c.c., precipitated with 5 c.c. of ammonia water, 1-per-cent., during twenty-four hours, collected in a small tared filteringtube, washed with 5 c.c. of water in portions of 1 c.c., dried at 100° C. to constant weight. Loss 0.0157, indicating solubility of 1 part of morphine in 1600 parts of the liquids.

b. Morphine 0.3181. Morphine lost 0.0131, corresponding to a solubility of 1 part in 1530 parts of the fluids. Correction, therefore, 1–1600 in precipitating liquid was adopted.

MECONIC ACID.

While meconic acid is a tribasic acid, and forms with silver and other univalent metal elements more than one salt, it combines with lead in but one proportion, forming the triplumbic meconate $Pb_3 2C_7HO_7$. Whether obtained in neutral or (acetic acid) acidified solution, or from an aqueous solution of free meconic acid, the lead salt was always the same—proven by the estimation of lead in the precipitate as oxide or sulphate. The *quantity*, however, will vary with the degree of acidity of the solution (acetic acid being the free acid). The variations were determined as follows, the precipitate being dried at 125° C. (below which temperature the salt cannot be obtained anhydrous):

1st. Free meconic acid:

0.2740 $H_3C_7HO_7 3H_2O$ gave 0.5370 $Pb_3 2C_7HO_7$. Calculated 0.5460, a recovery of 98.4 per cent.

2d. Free acid.

0.2770 $H_3C_7HO_7 3H_2O$ gave 0.5412 $Pb_3 2C_7HO_7$. Calculated 0.5512, a recovery of 98.2 per cent.

3d. Free acid in 1-per-cent. acetic acid solution:

0.287 $H_3C_7HO_7 3H_2O$ gave .5553 $Pb_3 2C_7HO_7$. Calculated 0.5725. Recovery of 97.0 per cent.

Conclusion: Exact determinations of meconic acid require, therefore, very neutral solutions for its precipitation as lead meconate. A single estimation of water in the specimen of meconic acid gave 23.35 per cent., leaving 76.65 per cent. $H_3C_7HO_7$ equivalent to 97.34 per cent. $H_3C_7HO_7 3H_2O$. With this correction for 2.65 per cent. water in the crystals, the estimations as lead meconate are fairly satisfactory.

EXAMINATION OF COMMERCIAL SOLUTIONS OF MORPHINE LABELED BIMECONATE.

It was found that but one product of a single laboratory existed. Examined as follows: Total solids dry at 100° C.; alcohol; morphine dry at 100° C.; meconic acid.

Results.

Solids: 5.067 gave 0.046 residue at 100° C. = 0.908 per cent.

Alcohol: 25 c.c. diluted to 50 c.c. and slowly distilled until 25 c.c. distillate were obtained; sp. gr. 0.9666, indicating 29 per cent. volume = 24 per cent. by weight of absolute alcohol.

Morphine: 30.0 evaporated to 15 c.c., transferred to a small flask, fluid and rinsing having a volume of 20 c.c.; precipitated by 2 c.c. 1-per-cent. ammonia water; after twelve hours, precipitate collected in a small tared filtering tube, washed with 7–8 c.c. water in five portions, dried at 100° C., and weighed: 0.240 $C_{17}H_{19}NO_3$=0.80 per cent.

Meconic acid: 24.25 solution diluted to 100 c.c. and precipitated by 0.500 lead acetate in 50 c.c. water, gave a washed, dried precipitate=0.41 equal to 0.0205 meconic acid crystals = 0.085 per cent.

This quantity of meconic acid is sufficient to saturate

0.363 morphine, or 45.3 per cent. of the total amount contained in the solution.

FURTHER TESTING FOR ACIDS.

Hydrochloric acid was found, estimated as silver chloride; 25.25 gave 0.090 $AgCl_2$, equivalent to 0.023 HCl, or 0.091 per cent.; if combined with morphine, equivalent to 89 per cent. of the total.

RESUMÉ.

The commercial solution is therefore, in its essentials, a 1-per-cent. solution of *hydrochlorate of morphine* in 24-per-cent. alcohol containing $\frac{1}{10}$ per cent. meconic acid.

Medical practitioners prescribe the preparation on a basis of strength equivalent to the liquid preparation of opium as directed in the Pharmacopœia, and consequently the preparation is about half-strength. The following formula will produce a preparation such as desired:

	Parts.
Morphine crystals	16.0
Meconic acid crystals	7.0
Alcohol, 91-per-cent	265.0
Distilled water	q. s.

Dissolve the morphine and meconic acid in 100 parts of water by heat; cool; add alcohol and sufficient distilled water to make 1000 parts.

Muscatine, Iowa.

BOTANY AND MATERIA MEDICA.

THE TRADE IN OPIUM.

BY P. L. SIMMONDS, F. L. S.

The commerce in, and consumption of, opium, in different countries, is a feature of some importance to the drug trade, made more interesting by the persistent attacks of the Anti-opium Society on the cultivation and production of the drug in India, and the extensive supply made to China. It is a subject which has occupied my attention as a technological writer for a long series of years. As far back as 1853 I wrote an article in Lawson's *Merchants' Magazine* (vol. ii, p. 68), extending over eight octavo pages, on "The Opium Trade and the Increasing Consumption of Narcotics." In 1871 an article of mine was published on "The Opium Trade of China," in the *American Journal of Pharmacy;* and in November, 1890, one on "Indian Opium." In the *Chemist and Druggist* for October, 1873, I published an article on "The Production of Opium in Different Countries." In the BULLETIN for December, 1891, I gave an article on "Opium Production and Smoking in China;" and I have recently had to write the article on "Opium" for the new edition of Chambers' Encyclopedia.

With the following official documents now before me, I have necessarily a quantity of reliable facts and data to refer to in documents published by the Imperial Maritime Customs of China; "Opium," with a map of the treaty ports (Shanghai, 1881; 80 pages); "Opium, Crude and Prepared" (Shanghai, 1888; 81 pages); "Native Opium," 1887, with an appendix on Native Opium issued in 1863 (Shanghai, 1888; 70 pages); "Opium—Historical Note on the Poppy in China" (Shanghai, 1889; 77 pages—part in Chinese); "Opium Trade, March quarter, 1889—with a map of the province of Kirin." Besides these I have at hand papers read in defense of our Indian opium trade by Mr. Batton before the Society of Arts, published in the Society's journal for April 1, 1892, and by Surgeon-General Sir Wm. Moore, K.C.I.E., before the East India Association, June 1, 1892. I merely cite these to show the mass of information available on this popular subject.

Various missionary writers who have published their views on this subject, are pretty generally agreed on the following points: Opium-smoking is an acquired habit, and is not pleasant to the novice; the pipe is usually resorted to in the first instance to alleviate pain or control sickness. The smoker who takes his pipe at stated and regular intervals becomes a greater slave to the habit than he who smokes at irregular intervals; the former cannot break off the habit without extreme difficulty, while the latter, if he chooses, can do so. Temperate smokers do not visibly injure their health by the indulgence; intemperate ones ruin their bodily constitutions, and their property is gradually dissipated; they die early, and mostly in misery. In this connection the following works may more especially be consulted: Williams's "Middle Kingdom," vol. ii., pp. 382 to 397; Lockhart's "The Medical Missionary in China," pp. 352 to 362; Doolittle's "Social Life of the Chinese," vol. ii., pp. 349 to 362; Muirhead's "China and the Gospel," pp. 110 to 127; A. E. Monte's essay on "Opium," pp. 352 to 362, at the missionary conference in Shanghai in 1877; Surgeon-General C. A. Gordon, C.B., "Reports of the Medical Officers in China" (1884).

But having dealt with this disputable topic in my article in the BULLETIN in December, 1891, I confine myself now to the trade aspect of the matter, throwing together a few facts and figures as to the commerce and consumption of the drug in those countries for which there are any reliable data available.

England.—I am able to trace back the imports and consumption of opium in the United Kingdom for about three quarters of the present century, but to give all the figures would be tedious. Suffice it to say that the imports in 1826 were 79,829 lbs., and of this 28,239 lbs. were taken for consumption. In the succeeding ten years the annual quantity retained for consumption ranged from 17,322 lbs. (the lowest) in 1827, to 61,000 lbs. (the highest) in 1848. In the next five years it averaged 59,550 lbs. yearly. In the ten years ending 1890 (deducting exports from the imports), the average yearly consumption was 199,692 lbs.; this is a large decrease from the average of the previous decade (1871 to 1880), which was 223,772 lbs. yearly.

The imports of opium into the United Kingdom in the last quarter of a century have fluctuated much, as will be seen by the following returns:

	TOTAL IMPORTS.	EXPORTS.
1865	401,571 lbs.	......
1866	198,223	140,933 lbs.
1867	273,522	148,519
1868	322,309	123,965
1869	219,495	107,279
1870	371,665	150,414
1871	591,466	307,399
1872	356,211	308,273
1873	400,469	250,577
1874	514,372	306,374
1875	536,291	298,556
1876	400,303	235,700
1877	607,362	251,267
1878	558,840	314,380
1879	572,411	232,338
1880	400,374	195,510
1881	793,146	401,883
1882	478,624	191,316
1883	774,069	425,008
1884	490,675	471,577
1885	710,099	425,196
1886	521,124	368,107
1887	654,122	353,137
1888	587,365	535,397
1889	492,115	409,738
1890	451,193	373,450

The imports of opium into England are chiefly received from Turkey, as the following figures show for the last ten years:

	FROM TURKEY.	FROM PERSIA.
1881	717,534 lbs.	21,012 lbs.
1882	359,560	54,442
1883	617,272	91,680
1884	412,528	41,573
1885	657,686	37,040
1886	405,761	83,656
1887	391,717	123,704
1888	549,848	8,541
1889	425,255	19,570
1890	360,963	30,035

We also imported Indian opium in the following quantities:

	Lbs.
1884	4,910
1885	5,786
1886	12,420
1887	81,038
1888	7,715
1889	14,832
1890	9,223

Persia.—Some thirty years ago, the profits of the opium trade in India having attracted the attention of the Persians, almost all available or suitable ground in the province of Yezd, Ispahan and elsewhere, was utilized for the cultivation of opium, to the exclusion of cereals and other produce. The neglect to provide for the necessaries of life, combined with drought and other circumstances, resulted in a famine; and since then a more limited space has been devoted to the poppy. The Persian opium for export is made up into cakes varying in weight from 12 to 24 ounces. A small quantity, in the shape of sticks or cylinders, is used locally. About five-sixths of the opium produced in Persia is intended for China. The imports of Persian opium into China, which were only 2,500 piculs in 1856 and 1857, have more than doubled in the last three years, reaching 5,913 piculs in 1891. The imports into China (including that in bond), which were in 1890 6,096 piculs, had increased to 7,129 piculs in 1891, including the variety of Persian which was styled in previous years Turkey opium.

The imports of opium from Persia have been as follows:

	Chests.
1869	1,560
1870	2,610
1871	1,230
1872	870
1873	1,400
1874	2,060
1875	2,030
1876	1,890
1877	2,570
1878	4,730
1879	5,900
1880	6,100
1881	7,700

The yield of Persian opium may be valued at £500,000 yearly.

The drought and famine were the cause of the decline in 1871 and 1872. The chests are made up so as to weigh a picul, 133⅓ lbs. The 1890 crop was a very large one, 4,817 cases having been shipped from Bushire—306 to London, and the rest to Hong Kong for sale in China. An ordinary year's crop may reach 2,500 chests, but this has been more than trebled of late years.

Persian opium is consumed in China chiefly in the early spring, at which season the supply of native opium usually becomes smaller. Persian opium only gives 2 to 8 per cent. of morphia, while Turkish yields from 7 to 11 per cent.

Turkey.—In Asia Minor the culture of the poppy only succeeds in the valleys of Kutaya, Ushak, Karahissar, Balikesr, Afium, Sparta, and Konijah, where they are for the most part protected from the cold winds by the chains of high mountains, and where the soil is favorable. The principal crop of opium arrives at Smyrna about the close of July or the beginning of August. The new opium is, however, little esteemed—that which is old and dry being preferred. The best comes from the district of Kutaya, the village of Bogaditsch and its neighborhood. It is in small round cakes, of a clear brown color, with a penetrating odor, and contains nearly 11 per cent of morphia. That from some other districts yields from 7 to 10 per cent.

The value of the opium exported from Turkey may be taken at £400,000.

The cultivation of the poppy for the preparation of opium was first introduced into Roumelia in 1848. The first experiment was made at Istip, with seed imported from Smyrna. In 1850 a crop of about 450 lbs. was raised, and consigned to London, where the quality was considered superior to that of India, and realized higher prices. In 1882 135,000 lbs. was produced. In 1890 a a medium crop of 750 to 800 quintals (or cwt.) was obtained. The average value of the annual opium exports from Salonica is £112,000. Aleppo exported 42,500 kilos in 1890. It is mostly produced at Nezile, a small town to the northeast of Aleppo, and sold in little paper packets in the bazaars of that city. Turkish opium is sent from Smyrna in the form of cakes. The largest crop in Turkey was in 1881—12,000 cases. In the export year ending March, 1880, the shipments were 315 packages of 1,000 okas, the oka being about 2¾ lbs.

India.—There are two kinds of opium made in India. That for export to China is called "provision opium," made up into round balls. That to be used locally in India is known as "excise opium," and is moulded into cakes, which are stamped with the device of the imperial crown and the legend "Benares Abkari," it being made in that district. This form of opium yields a revenue to the Indian Government of about £1,000,000. Excise opium for internal consumption is retailed to the consumers as a decoction or in the form of two smoking mixtures, known respectively as *Chandre* and *Madak*.

The following figures give the exports of opium from India in chests of about 140 lbs., with the value, for the financial years ending March:

	Chests.	Value.
1874	88,727	£11,341,857
1875	94,746	11,956,972
1876	88,350	11,148,426
1877	96,870	12,404,748
1878	92,820	12,374,355
1879	91,200	12,993.979
1880	105,507	14,323,314
1881	92,190	13,600,148
1882	89,338	12,432,142
1883	91,798	11,481,379
1884	91,963	11,294,460
1885	86,578	10,882,606
1886	87,956	10,735 518
1887	95,839	11,077,669
1888	90,096	10,067,763
1889	87,789	10,508,080
1890	85,166	10,115,936
1891	85,735	9,261,814
1892	87,560	9,562,490

This nearly all goes to China.

The exports of Indian opium in the financial year ending March, 1892, were as follows, the chests being variable:

	Cwt.
To Hong Kong	71,359
Treaty ports	25,760
Cochin China	1,291
Straits Settlements	22,072
Other countries	1,221
	121,703

This shows a small increase over the two previous years, which were: 118,598 cwt. in 1890, and 119,627 in 1891. The value of the opium, taking the rupee at two shillings (which it is not), was in 1889–90 £10,115,936; in 1890–91, £9,261,814; in 1891–92, £9,562,490. Of the exports for the year ending March, 1892, Bengal shipped 83,221 cwt., and Bombay 38,482 cwt.

The net receipts from opium brought into the Indian Government in 1889–90 were nearly £7,000,000. About 4,500 chests of excise opium, for local use, are issued yearly in Bengal, at the rate of about 14*s.* a sur (a little over 2 lbs.). The Malwah opium pays a duty of £6 5*s.* a chest.

China.—The progress made in the consumption of opium in China is large and progressive. From 1830 to 1840 the imports amounted on an average to 20,619 piculs yearly. From 1840 to 1850 the imports increased to 52,925 piculs. Since then, taking decennial periods, we get at the following figures:

	Piculs
1860 (the trade legalized)	89,744
1870	95,043
1880	96,839
1890	76,616

Its use has been general among Asiatics as a stimulant and narcotic, from time unknown.

Deducting the Persian, the imports of Indian opium into China in the last three years were:

	Piculs.
1889	70,906
1890	71,616
1891	71,532

The net quantity of foreign opium that passed into consumption at the different treaty ports of China averaged in the three years ending 1891, 77,000 piculs, being an increase on the five years' average ending 1886 of 10,000 piculs. The year 1888 showed an exceptionally large import of 82,612 piculs.

The domestic growth of opium has assumed large proportions during recent years. Every province produces it, and the total production seems enormous. It is estimated by many authorities at from 100,000 to 150,000 piculs—125,000 to 186,000 cwt. (The Ningpo Customs Commissioner estimated the home production of opium in 1881 at from 165,000 to 265,000 piculs.) Adding the imports of foreign opium taken for consumption, in 1891, of 77,445 piculs, the total consumption in China may be fairly estimated at 200,000 piculs —250,000 cwt.; or, brought into pounds, equivalent to 28,000,000 lbs., for a population of say 400,000,000.

United States.—In 1869 the value of the opium imported into the United States was a little over one million dollars; from 1871 to 1878 the average yearly imports rose in value to two million dollars; the sum paid has since dropped to a little under $1,500,000. The imports were, in the latest two years of which I have the returns:

	1889.	1890.
Crude opium	391,563 lbs.	473,095 lbs.
Opium prepared for smoking	96,678	34,465
	488,241	507,560

So that the quantity of opium taken for consumption in the United States is more than twice as much as is consumed in the United Kingdom. Of course the difference of population has to be taken into consideration—thirty-eight millions in the United Kingdom and sixty-five and one-half millions in the United States—and there are probably more Chinamen who use it in North America than in England.

The imports of opium were, in 1876, 228,742 lbs.; in 1880, 533,451 lbs. Is it used to saturate tobacco?

In the *Dominion of Canada*, the imports of crude opium were, in 1890, 128,581 lbs., of which 105,055 lbs. were entered for consumption. The imports in 1891 were 156,841 lbs., of which 141,098 lbs. were taken for consumption. The duty is $1 on crude opium, and 50 cents on prepared opium for smoking. In 1890, 5,902 ounces of morphia were imported, of which 5,152 ounces were entered for consumption. No doubt much opium is smuggled over the frontier and through Oregon for the use of the Chinese in California.

Under the auspices of the East India Association a meeting of gentlemen interested in the affairs of the British Empire in the East was held at the Westminster, Eng., Town Hall in June, 1892, Sir Roper Lethbridge, K.C.I.E., M.P., presiding, for the purpose of discussing recent developments of the opium question. The principal address was delivered by Surgeon-General Sir William Moore, K.C.I.E., honorary physician to the Queen, who argued that while smoking is less injurious than opium-eating, still the latter is not the destructive habit which it has been portrayed; that the effects of opium taken in any manner are altogether on the nervous system, and, however great, pass off; that no organic disease is traceable to the use of opium, whether used in moderate quantities or in excess; that opium is almost a necessary of life to some people; and that there is no more immorality in smoking opium than in drinking wine or in smoking tobacco. Against the common platform assertion that "Indian opium is rapidly destroying the Chinese nation," he urged that in almost all walks of life the Chinaman can compete with and beat the European, surpassing him in industry, sobriety, and carefulness of living. The Chinese, carrying their opium pipes, invade the world, proving themselves the strongest, most industrious and enduring, as well as the most thrifty and prudent of all people, laboring for very small wages, and living upon food that a Briton would scorn. And opium enables them to do this. In fine, Surgeon-General Sir William Moore insisted that opium is not the injurious agent it has been asserted to be; that there are reasons connected with climate, disease, food, products of the country, manner of life, habits, and customs, why Easterns use opium; that the beneficial results from the use of opium go far to counterpoise any injurious effects; that the anti-opiumists are not justified by any law, human or divine, in their crusade against opium, and that there is ample scope for their overflowing philanthropy at home. A discussion followed in which some diversity of opinion was manifested, several speakers expressing views in direct antagonism to those of Sir William Moore, and in the result a vote of thanks was accorded to that gentleman for his paper.

Australia.—The opium imported into the Colony of Victoria in the year 1889 was 20,045 lbs., valued at £39,986. It pays a duty of 20*s.* per lb. In 1890 the imports were 17,684 lbs., of which 16,591 lbs. were taken for consumption. In New South Wales the imports were 25,256 lbs. in 1889, and 18,097 lbs. in 1890. For Queensland the imports were 23,378 lbs. in 1889, valued at £27,185; in 1890 the imports were 25,000 lbs., and the quantity taken for consumption 27,373 lbs. The population of Queensland is about 400,000, of whom nearly 8,000 are Chinese. The whole number of Chinese in Australia is 45,381, of whom 13,529 are in New South Wales and 11,290 in Victoria, so that there are about 13,000 spread over the other Australian colonies. The import duty of 20*s.* per lb. is pretty general in Australia.

PITCHER-PLANTS AND FRANKINCENSE.*

BY E. M. HOLMES, F. L. S.

The History of Sarracenia.—Sarracenias are wonderful enough as insect-trapping plants, singular enough in leaf-form, and beautiful enough in their flowers, to attract attention from many quarters; but what connection there can be between the Olibanum, or frankincense of Arabia, and the Pitcher-plants of North American swamps, it is not easy to see. Nevertheless, some of our forefathers seem to have thought there was such a connection, as we shall presently indicate.

The French botanist Tournefort has the credit of having introduced the Sarracenia to the notice of botanists; and although we shall show that something was known of the plants long before his time, we are not going to detract in any way from the merit pertaining to him for having given the first accurate account of the genus accompanied by excellent figures of the flower.

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* Through the courtesy of Mr. Holmes we are able to republish this interesting paper from the columns of the English periodical to which it was last month contributed by the author.—ED. BULLETIN.

As it is not under Sarracenia that one must look for the early history of the plant, but under "Thus," or under "Limonium," it is only by accident that the student gets upon the right track. When once started, progress is not difficult, and the history is curious enough to interest the plant-lover. We shall therefore allude, in chronological order, to the history, so far as we have been able to unravel it. The earliest notice we have lighted on is in Pena and Mathia de Lobel's *Stirpium Adversaria nova, Londini*, 1570. In this volume, at p. 430, is a figure showing two leaves, which are without doubt those of what we now call Sarracenia, but which were then attributed, doubtfully, to the Frankincense tree: "Thuris limpidi folium aiunt." It is expressly stated that the leaf had not been figured previously, and that it differed from others in being double, or made up of two coats from the stalk upwards to the hood, the resemblance to the flowers of Napellus [Aconitum] and Lonchitis [?] being pointed out. We quote the exact words, the meaning of which is obvious, though we do not find it easy to construe them satisfactorily:

> "Rupellæ occidui maris quadriennium *fermé* est cum doctus medicus Launatus nos gummi istius glebis, arboris fructu et folio donavit. Asserabat nihil tamen, sed sibi relatum a nautis, utrinque trunci Pino similis sobolem esse. At folium, quia valdequàm rarum nequedum ab ullo depictum, hic dedimus, magis sciscitaturi, sitne Resiniferæ plantæ quam asserturi. Est namque, quod raro contingit aliis, ab imo pediculo ad summum usque cuculæ verticem, duplicatum, quasi ex geminis conflatum tenuibus tunicis vagina, sesquipalmum longa, instar infundibuli, hiantis histrionis speciem præ se ferentis; superne galeata videtur, quod de floribus Napelli et Lonchitide non de foliis ullis memorant autores."

In 1575 was published the *Cosmographie Universel*, by Thevet. In the first volume of this work, at p. 119, is an account and a figure showing the mode of extracting the "encens" by means of incisions into the bark, the gum-resin being afterwards scraped off and packed in jars. A palm tree and some pyramidal trees which may be meant to represent cypresses or junipers, are shown in the background, but nothing in the least like a Sarracenia. Thevet, then, the great authority of his time on frankincense and similar things, is not answerable for the collocation of two such diverse things as the pitcher-plants and the frankincense.

In *Dodoens, Stirpium Pemptades* (1583), we have not discovered anything relating to the matter under consideration.

Dalechamp's *Historia Omnium Plantarum* was published in 1586, and in it we find mention of the "Arbor thurifera Theveti," just mentioned, and a figure of the "Thuris limipidi folium Penæ," the whole copied from L'Obel.

In 1588 was published the first edition of *Jacob Theodor Tabernæmontanus neue Vollkommene Krauterbuch*, an edition of which was published at Basle in 1664, by Caspar Bauhin. In the original edition, vol. ii, p 642, cap. iii, under the head "Weyrauch, Thus," is a figure showing a portion of the stem of a tree with lumps of gum or resin exuding from it; and, on the right, two leaves, which appear to be those of Sarracenia, but which are provided, probably from the artist's imagination, with fine hairs. In 1597 the first edition of Gerard's Herbal was issued. In this volume, p. 1247, under the heading "Abor Thurifera, the Frankincense tree—Thuris Limpidi folium L'Obelij—the supposed leafe of the bright shining Frankincense tree," the same illustration as that given in Tabernæmontanus before referred to is given, and a copy of which we append at Fig. 1, omitting, however, the resin-bearing trunk. Gerard gives a translation of the passage in Pena and De L'Obel which we have cited before. Says Gerard: "Pena writeth that he has seene the cleere Frankensence called Limpidum, and yeelding a very sweete smell when it is burnt, but the leafe hath beene seldome seene, which the Physition Launanus [spelt Launatus by L'Obel] seemeth to set out thus, although it be not certain whether it be the leafe of the Frãkincense, or of some other Pine tree, yeelding the like juice or gum. It is, saith he, which doth seldome happen in other leaves, from the lower part or foote of the leafe to the upper ende, as it were doubled, consisting of two thinne rindes or coates, with a sheath a spanne and a halfe long at the top, gaping open like a whoode or fooles cockscombe, and as it were covered with a helmet, which is a thing seldome seene in a leafe, but is proper to Leekes or Lonchitis as writers affirme." As we have seen, L'Obel compares it more appropriately with Napellus.

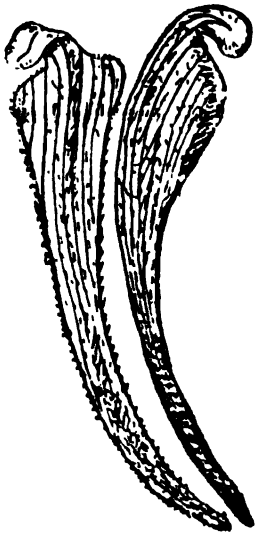

FIG. 1.—"THURIS LIMPIDI FOLIUM L'OBELIJ; the supposed leafe of the bright shining Frankincense tree." Gerard's Herbal, p. 1247 (after Tabernæmontanus).

In Johnson's edition (1636) of Gerard's Herbal, at p. 1435, the history given in the first edition is repeated, with a few amplifications. It is pointed out that the Physition Launanus gave to Pena and L'Obel a leaf, "together with some pieces of the Rosine which he had of certaine mariners, but he could affirme nothing of certaintie, whether it were the leafe of the Frankincense, or of some other Pine tree yeelding the like juice or gum." Johnson also compares the leaves to the flowers of Napellus or Lonchitis; and not to Leekes, as Gerard originally did. The woodcut in Johnson's edition is different from that in the older one; the Sarracenia leaves represented are smaller, and in a reversed position, as if they had been copied from the older woodcut.

It is rather singular that Johnson did not take note of the important account published by Clusius more than thirty years previously; Clusius' *Historia* dates from 1601. In that work, at lib. iiij, cap. lv, p. lxxxij, we find an excellent representation of a plant of *Sarracenia purpurea* taken from a drawing of a living plant, and showing a tuft of leaves surrounding the remains of the flower stalk. Clusius, having no flower before him, did not know exactly where to range these leaves in the system, but referred them to the neighborhood of Limonium, speaking of the plant as "Limonio congener." Limonium is now what we call Sea Lavender, or Statice, and we fail to see any connection between Sarracenia and Statice beyond what arises from their both being found in muddy (limus=mud) places, like the "Ostreæ limicolæ" of the classical writers. It may be well to cite exactly what Clusius says in the original Latin, a translation of which will be found later on:

> "Peregrina prorsus et elegans est hæc planta cujus iconeum et resiccatu folium Lutetia usq; ad me mittebat humanus vir et diligentissimus Pharmecopoeus Claudius Gonier qui siccam eam et confracto caule mutila Ulysipone, veluti ad me scribebat acceperat. Sunt verò huic plantæ (Claudio teste), folia novem decem aut plura a summo radicis capite prodeuntia, quorum forma ab omnium quas unquam viderim stirpium foliis diversa est, quia cava sunt, floru Aristolochiæ instar tumente alvo et veluti paleari prædito gibba dorso, infima parte angusto. . . . Natales non indicati neque quo tempore flores det notandum."

The description given by Clusius is accurate, so far as it goes, and, assisted by the excellent woodcut, there is not the slightest difficulty in recognizing what we now know as *Sarracenia purpurea*. Clusius knew nothing of the native locality, and says nothing about Frankincense.

Bauhin's *Pinax* (1623), p. 192, has "Limonium peregrinum foliis forma floris Aristolochiæ;" but Bauhin adds nothing to what was previously known by Clusius.

Parkinson (1640) in his Theater of Plants, p. 1235, copies Clusius' figure under the title, "The Hollow-leaved Strange Plant of Clusius." . . . . . "This strange plant has such strange leaves, as the like are seldome seene in any other that we know growing, for they are nine or ten or more rising from the head of a small long roote, each by it selfe, being small below, and growing greater upwards with a belly as it were bunching forth, and a bowing backe, hollow at the upper end with a peece thereon like a flappe and like unto the flower of Aristolochia or Birthwort, and round at the mouth like a halfe circle full of greate darke purplish veines on the inside; the whole leafe is of a thicke substance almost like unto leather; among these leaves sprang a stalke, but was broken short of, so that what flower or seed it bore could not be observed. This was sent to Clusius from Paris by one that received it from Lishbone in the same manner. But of late, Master John Tradescant the younger found this very plant in Virginia, having his toppe thereon, which he brought home, and groweth with him, which I here shew you with Clusius his figure; the leaves are longer, narrower, and not bellying out, and the flower is borne at the top of the roundish seed-vesselle."

Here we have the first indication of any member of the genus being in cultivation, and that in England; but, from what will appear later on, the species grown by Tradescant appears to have been *S. flava* rather than *S. purpurea*. Parkinson's account is a paraphrase from that of Clusius, and to it he adds the just remark: "It seemeth to mee that L'Obel's Thuris limpidi folium is this (*i. e.*, Clusius' Limonio congener)."

In John Bauhin's *Historia Plantarum Ebroduni* (Yverdun), 1650, we also find a copy of L'Obel's account, and figures of three leaves—two similar to, but not identical with, those given by Tabernæmontanus and Gerard, and a third which we see for the first time and which evidently represents the *Sarracenia variolaris* of Carolina and the Southern States.

In Chabræus' *Stirpium Icones et Sciagraphia* (1666), at p. 73, the three figures just alluded to are repeated. Chabræus' figure is entitled "Thuris folium cucullatum" (Fig. 2), and he goes on to tell us that this hood-shaped and beautiful leaf was occasionally brought from Florida. "Speciosum cucullatum et canaliculatum hoc folium, quod e Florida adferri solet, pingunt etiam Adversaria et Thuris limpidi folium inscribunt." The "Adversaria" being, of course, the work of Pena and L'Obel before alluded to. Chabræus goes on to say that his *Icon* was taken from Thevet's book, already alluded to, but Thevet gives no figure of a Sarracenia leaf, nor, so far as we can find, any reference to it.

Plukenet, in his *Almagestum* (1696), 72, and in his *Amaltheum* (1705, t. 376), f. 6, figures *Sarracenia purpurea;* and at t. 152, f. 3, of the latter work, under the name Bucanephyllon elatius Virginianum e limonio congeneris altera species elatior foliis triplo longior, gives a figure of *Sarracenia flava*. *S. purpurea* is also figured in the *Amaltheum*, pl. 5, f. 45.

Morison, in his *Plantarum Historiæ Universalis* (1680), Part III, sec. xiii, p. 533 (we quote from Bobart's edition of 1699), refers to our plant under the name "Coilophyllum virginianum folio breviore, flore purpurascente, nobis—" and cites the synonyms of Clusius and Bauhin previously mentioned. Morison's specimen was received from Virginia through Banister. Morison is also said to mention in 1680 a Coilophyllum virginianum, longiore folio erecto luteo, a description of which applies to *S. flava.*

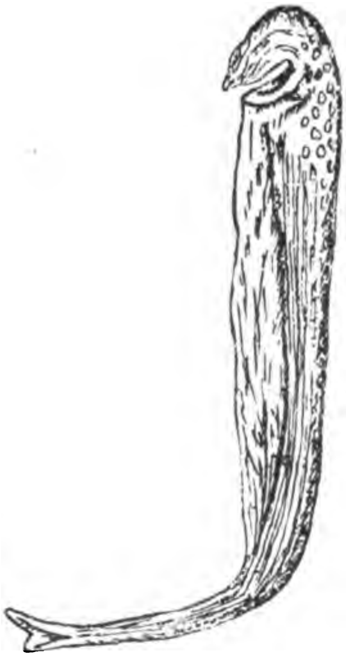

FIG. 2.—"THURIS FOLIUM CUCULLATUM," from Chabræus' *Stirpium Icones* (1666), p. 73; the same figure as in John Bauhin's *Historia.*

We now come to the first adequate publication of the genus, accompanied by excellent representations of the flower. This was in Tournefort's *Institutiones*, tom. i, p 657, t. 476—we quote from the third edition published in 1719 (the first was issued in 1700). Tournefort describes his Sarracena canadensis foliis cavis et auritis, and goes on to tell us that he named the genus Sarracena [not Sarracenia, as usually written], in honor of Dr. Sarrazin, a doctor of medicine, and regius professor of anatomy and botany, who out of his great kindness sent the plant to Tournefort from Canada.

What we now call *Sarracenia purpurea* was therefore the first of the race to receive a name in modern form. It extends, according to Macoun, from Labrador, Newfoundland, and Nova Scotia to the Rocky Mountains, and as far north as Bear Lake, but is quite unknown as a wild plant in Arabia, indeed in the Eastern hemisphere.

In 1756 a summary of existing knowledge on the subject was given in Hales' "Compleat Body of Husbandry," as follows: "Leaves long before the flowers were seen in Europe were sent over from America as curiosities; with these the old English botanists became acquainted, and figured them, though without any account of the flower. They call it in their own language the strange hollow-leaved plant, and after Clusius (who, from the imperfect account he had been able to obtain of the herb, supposed it related to the Sea Lavender) Limonio congener. . . . . Bauhine, supposing it of the Limonium kind, called it Limonium peregrinum foliis forma floris Aristolochiæ. Plukenet, better acquainted with its nature, named it Bucanephyllum; and Morison, Coilophyllum. . . . . That there were two species of the plant was not understood at first, and thence Clusius, by whose means we became acquainted with the plant, suffered some censure. He had received a leaf, and a figure of more leaves, from an apothecary of another nation, Conier, to whom it had come through several hands from America. Our famous Tradescant brought over the other species (flava) from America soon after, and, the leaves being much longer and narrower than in Clusius' figure, he was supposed to have given them imperfectly. Since his time we find Clusius was right, and Tradescant's the other species."

We cannot now pursue the matter further; it must suffice to say that we have shown that the Canadian species was known to Pena and de L'Obel as early as 1570. A second species, *S. flava*, was also brought over and grown by Tradescant before 1640.

A third—Floridan—species was also known as early as 1650.

In some way or another the Canadian and the Florida species became mixed up with the frankincense trees, and their leaves were supposed to be those of a tree or trees yielding that substance.

Sarracenia, as now known, has nothing whatever to do with frankincense. The association, such as it is, must be laid to the hear-say evidence retailed by the "physition" Launatus. L'Obel and those who followed him were rightly cautious in repeating his story, but they were good enough also to give illustrations which, as we have seen, push back the history of Sarracenia much further than is generally known. Sir George Birdwood, in his exhaustive paper on the genus Boswellia, in the *Transactions of the Linnæan Society*, xxvi (1871), iii, summarizes the history of frankincense, and of the plants producing it, even quoting Gerard, but apparently overlooking the statement and figure relating to the Sarracenia, as also do Flückiger and Hanbury.

The first Sarracenia known was, therefore, that which we now call *S. purpurea*, figured in *Bot. Mag.*, t. 849, and which we have traced back to 1570. It was introduced to cultivation, according to Aiton's *Hortus Kewensis*, by Mr. John Tradescant, Jr., before the year 1640.

The second was *S. flava*, figured in *Bot. Mag.*, t. 780, also introduced by Tradescant.

The third was what we know now as *S. variolaris*, of Michaux, *Flor.* i, 310, *Bot. Mag.*, t. 1710, and which we have now followed to the time of John Bauhin (1650), but which was not introduced into cultivation till 1803. The other species are of more recent introduction.

Paste for Labels.

A good paste that will stick labels to a metallic surface is made as follows:

Powdered alum	ʒ j.
Powdered borax	ʒ j.
Hydrochloric acid	ʒ vj.
Wheat flour	℥ viij.
Water	fl ℥ xij.

Mix the alum, borax, and flour with the water, stirring till quite smooth; then add the acid, and boil until the flour is disintegrated. If required, it can be thinned with more water.

Egg Champoo Cream.

L. C. F.—Try the following:

Borax	℥ ij.
Glycerin	fl ℥ j.
New England rum	fl ℥ xv.
Bay rum	fl ℥ x.
Whites of egg	No. ij.

Incorporate the borax in fine powder with the glycerin, and add the bay rum and New England rum gradually and with constant stirring to the mixture. The previously well-beaten white of egg is added lastly, and the whole stirred thoroughly until an even mixture results.

Green's August Flower.

Dr. G. S.—Prof. Virgil Coblentz gives the following formula:

℞ Rhubarb	360 grains.
Golden seal	90 grains.
Cape aloes	16 grains.
Pepperment lvs	120 grains.
Potass. carbonate	120 grains.
Capsicum	5 grains.
Sugar	½ pound.
Alcohol	3 ounces.
Water	10 ounces.

Macerate drugs in mixed alcohol and water; filter; add sufficient dilute alcohol through filter to make one pint; then dissolve the sugar.

Fever Drops (Warburg's).

	Parts.
Camphor	2½
Aloes	2½
Orange peel	10
Elecampane root	12
Alcohol, 90-per-cent	240
Dilute sulphuric acid	24
Sulphate of quinine	9
Wine of opium	2½

Digest the first four ingredients with the alcohol, to which has been added the dilute sulphuric acid; and to the resultant tincture add the sulphate of quinine and wine of opium, and dissolve.

Rat-Paste without Phosphorus.

Tartar emetic	3.75 grammes.
Squill, powd	3.75 grammes.
Precipit. carbonate of barium	7.50 grammes.
Roasted meat	45.00 grammes.

Foam-Syrup for Soda-Fountain.

K. Rust.—

℞ Gum acacia	2½ pounds.
Crushed sugar	7½ pounds.
Tinct. of quillaia	10 fluidounces.
Benzoic acid	1½ drachms.
Hot water	5 pints.

Dissolve the gum in the water; strain, then dissolve the sugar in the clear solution; and lastly add the tincture of quillaia and benzoic acid.

Mouth-Wash.

H. A. W.—Ebermann gives the following formula:

	Parts.
Orange peel	100
Cinnamon	50
Clove	20
Star anise	60
Sage	50
Benzoin	35
Cochineal	20
Alum	20
Oil peppermint	10
Oil anise	3
Alcohol	1000

Mix, macerate for a week, and filter.

Boschee's German Syrup.

L. K.—Boschee's German Syrup is said to have the following formula:

	Parts.
Oil of tar	1
Fluid ext. ipecac	4
Fluid ext. wild cherry	6
Tinct. opium	4
Magnesium carbonate	3
White sugar	80
Distilled water	48

Triturate the oil of tar with the magnesia; mix the fluid extracts and the water; add to the oil-of-tar trituration; filter, and add tinct. opium and sugar.

Treatment of Burns on Children.

Marleton.—The burns are first washed with solution of boric acid, and the following mixture applied on pads of absorbent cotton, or, better, gauze:

℞ Lime water	50.0
Linseed oil	50.0
Thymol	0.05 to 0.1

This is replaced in about ten days by an ointment composed as follows:

℞ Bismuth subnitrate	10.0
Boric acid	5.0
Olive oil	20.0
Lanolin	65.0

Florida Toilet-Water.

M. O. N.—The following gives good results:

Oil lavender flowers (best)	℥ ij.
Oil bergamot	℥ iv.
Oil cinnamon, Ceylon	ʒ ij.
Oil clove	ʒ j.
Oil neroli	ʒ ij.
Tinct. musk Tinct. Tonka beans } ää	℥ ij.
Cologne spirits, q. s. to make 1 gallon.	

Mix, let stand one week, and filter.

Swan's-down Face-Powder.

Clark.—A harmless face-powder is obtained by this formula:

Oxide of zinc	℥ viij.
Orris root, powd	℥ iiss.
Purified talc	℥ x.
Extract of musk	♏xij.
Extract of jasmine Extract of white rose Extract of cassia } ää	♏lx.

Mix thoroughly, and pass through a fine sieve.

Diuretic Wine.

M. L. P.—Trousseau's diuretic wine is composed of:

	Parts.
Juniper berries	30
Digitalis	6
Squills	3
Acetate potassium	20
White wine	400
Alcohol	50

Macerate drugs for two weeks in wine and alcohol; express, add acetate of potassium, and filter.

Charcoal Tooth-Paste.

Powd. charcoal Powd. cinchona Vanilla sugar } ää	℥ j.
Oil cinnamon	♏x.
Honey	℥ j.

Mix and form a paste.

Vanilla Sugar.

Powdered sugar	℥ j.
Tinct. vanilla	ʒ j.

Coricide, or Death to Corns.

This is an English proprietary article of the following composition:

	Parts.
Extract Cannabis Indica	1
Salicylic acid	10
Oil of turpentine	5
Acetic acid, glacial	2
Collodion	82

Concentrated Solution of Boric Acid.

The solubilility of boric acid is known to be approximately 4 parts in 100 parts of water, but a 20-per-cent. solution is obtained thus:

	Parts.
Boric acid	20
Magnesium carbonate	3½
Water	100

Antiseptic Tooth-Paste.

Precipitated chalk	℥ viij.
Powd. soap Powd. sugar } ää	℥ iv.
Powd. acacia Powd. myrrh } ää	℥ ss.
Carbolic acid	ʒ ij.
Menthol	grs. xx.
Powd. borax	℥ j.
Glycerin, q. s. to make a paste.	

A Result of Impurity.

To the Editor of the BULLETIN: I send you to-day a prescription that appears to offer a conundrum; at first the mixture looks slightly tinted, and in a few hours the color turns quite dark brown. Will you let your chemist tackle the theory of the "metamorphosis?"

℞	Sodæ salicylate	ʒ iij.
	Spt. atheri nitrosi	ʒ vj.
	Aq. menth. pip ad	℥ vj.

W. B.

Our chemist makes the following report on the above:

In regard to the dark color formed on standing, in this mixture, I would infer from experiments performed that it is due to the impurity of the spts. nitrous ether, free acid being found in it. The nitrous acid reacts upon sod. salicylate, forming a nitro-compound of dark color. Careful neutralization will prevent this discoloration. (NaOH was used in experiment.) The color formed in this prescription is not due to the action of light. It is recommended that pot. tartrate be kept in contact with the spts., thereby neutralizing the acid formed.

Antichap.

The *Druggists' Circular* answers the query of a correspondent concerning this as follows:

J.—We are unable to tell you the composition of this preparation, but the following formula produces an emollient which serves its purpose well:

Quince seed	1½ drachms.
Boric acid	4 grains.
Carbolic acid	10 grains.
Glycerin	2 fluidounces.
Alcohol	3 fluidounces.
Cologne	2 fluidrachms.
Oil of lavender	20 drops.
Glycerite of starch	2 ounces.
Water sufficient to make	1 pint.

Dissolve the boric acid in eight fluidounces of water, macerate the quince seed in the solution for three hours, press through a straining cloth, add the glycerin, carbolic acid, and glycerite of starch, and mix thoroughly; mix the cologne and oil of lavender with the alcohol, add the solution to the mucilage, and mix the whole well. The carbolic acid may be omitted if objectionable.

PARIS LETTER.

The Revival of Old Paregoric—Resorcinol, a New Compound—A New Worm-Chaser—The Sequelæ of Brown-Séquard's Discovery—An Antitetanic Organic Liquid—Stomach-Comforters Good Sellers—A Toxic Oxide Demonstrated—A Bougie for Blenorrhagia—Death of a Beloved Nonagenarian.

The recent Parisian revival of Old Paregoric has determined a gentle smile among the American and English pharmacists here present. "Paregoric," writes Mr. P. Carles, "until very recently unknown to the generation of young doctors, and forgotten by most of the physicians who have ripened in the profession, was suddenly brought to the front by one of our Great Therapeutic Authorities, and was held up to our view as *a synthetical product of a German laboratory!*" Well, as Mr. Carles explains, this was not precisely the way to make paregoric popular in France, and yet paregoric was needed as "a true remedy for cholera." Hence the paternity of paregoric was duly hunted up; London was finally declared to be its father, and Edinburgh its mother; the French choleraics permitted themselves to ingest it, and the scientific press soon flowered with historical dissertations upon the ancient elixir.

Resorcinol is the name of a new remedy said to have been put forth by a Russian doctor rejoicing in the name of Bielaiew. It is obtained by heating equal parts of resorcin and iodoform. The resultant compound is amorphous, of a yellowish-brown color, and has an "iodinic odor." Its discoverer claims to have successfully employed it in luetic lesions, leg ulcers, and unhealthy sores of all sorts. It is believed to quiet itching, etc. Being very active, it must not be used in a pure state except in atonic or gangrenous conditions. The pharmaceutical preparations for ordinary employment are formulated as follows:

Resorcinol	1 gramme.
Starch	4 grammes.

Use as a dry powder.

An ointment is made with:

Resorcinol	2–4 grammes.
Lard	30 grammes.

Vaselin does not make a good mixture with this substance.

Dr. Duhourcau's new tæniafuge is said to have been very successful. At all events, the pharmaceutical journals are giving out the formula for it. It appears that Dr. Duhourcau, having read in an American paper that chloroform in glycerin, followed by castor oil, was very successfully used in the expulsion of tænia, conceived the idea of uniting the anæsthetic with the purgative. After much experimentation he arrived at the following formula:

Male fern (ext.)	1.20 grammes.
Chloroform	3.60 grammes.
Castor oil	3.60 grammes.
Croton oil	½ minim.

Divide into twelve capsules.

According to the author, these capsules act promptly and with certainty, are easy to take, and cause no toxic sequelæ.

It is a question how soon the pharmacist may be obliged to keep on hand the "solutions of organic lymph," which have grown in number and possibly in reputation since Mr. Brown-Séquard's initial experiments with ganglionic liquids. At all events, these preparations have already been brought (by Mr. Delpech) to the notice of the Société de Pharmacie de Paris. They are designated as follows: "Cerebral Liquid for Nervous Transfusion;" "Solution of Gray Matter from the Brain of the Sheep" (Constantin Paul); "Solution of Testicular Extract from the Ram;" and "Solution of the Extract from the Thyroid Gland of the Sheep." The reader will wonder how soon we are going back to mediæval pharmacy. Mr. Delpech felt it incumbent upon him to tell pharmacists how to prepare these agents, and his directions are herewith recorded for the benefit of our brethren of an ultra scientific turn: "All of these organic liquids are prepared by mincing the organs cited, the product being macerated in glycerin. Boiling water containing salt is then added, and the product is filtered. The clear liquor is now placed in a sterilizing apparatus, in which it is subjected to a pressure of fifty to sixty atmospheres for fifteen minutes. Then, under the same pressure, it is passed through an aluminium filter, and the new elixir vitæ is an accomplished therapeutic agent." It would be interesting to know the chemical composition of the liquid before and after this process; also if the substance can be made by synthesis; also if almost any nerve irritant in small doses would accomplish the proposed end.

Antitetanine, or antitetanic serum, a remedy proposed some months ago by Tizzoni and Cattani, is another organic liquid, which comes occasionally to the front as a great remedy. Dr. Berger lately described to the French Academy of Medicine its most recent triumphs. A young man, wounded in the little finger, manifested strong symptoms of tetanus. Dr. Berger amputated the finger at once, administering at the same time this antitetanic serum. The patient made a prompt cure. Then followed a vigorous discussion as to which measure cured him, amputation or the giving of antitetanine.

The Paris pharmacist is noted as always keeping full lines of gastric or gastro-intestinal remedies, so-called. Any preparation to aid or comfort digestion or the bowel functions is grasped by him as being what some of my brethren at home would call "a good seller." The vogue at present is for Dr. Bardet's preparations for hyperacid digestion, these having temporarily replaced Dr. Dujardin-Beaumetz's medicaments for flatulence and gastrectasis. The Bardet remedies are intended to combat hyperacidity, the tendency to vicious fermentation, the production and resorption of toxines, etc. The first on the list is benzonaphthol, which should be dispensed (says Bardet) in 5-gramme powders (*sic*), of which two are to be taken daily. This may be given alone, or with 2 to 3 grammes of salicylate of bismuth. If constipation is present, hydrated magnesia is added.

Italian chemists have lately found, by experiments on dogs, that the oxide of zinc is a toxic substance, so we might as well make a note to this effect in our "*index rerum*." Amore found that daily quantities of 50 centigrammes, in divided doses, determined in dogs repeated vomiting, great muscular weakness, partial loss of sensibility, diminished urine, destruction of red corpuscles, paralysis, and death.

Weber's urethral bougie for the rapid cure of blenorrhagia has received the endorsement of the Société de Thérapeutique; so, I suppose, it will have a run, provided only that the quantity of coumarin contained in it will sufficiently disguise the odor of the iodoform therein. The formula is as follows:

Pulv. gum arabic	15 grammes.
Lactose	5 grammes.
Glycerin	15 minims.
Coumarin	50 centigrammes.
Iodoform	2-4 grammes.

Make ten bougies, 13 centimeters in length. One to be introduced into the urethra at bed-time.

Eugene Schaedelin, the oldest of the French pharmacists, lately died in Paris, at the age of 90 years At the time of his death he was chief librarian of the Paris Faculty of Medicine. He practiced pharmacy in Alsace for many years, and was greatly loved in that region on account of his generosity and the devotion displayed during the epidemic of cholera in 1851.

LONDON LETTER.

Fog vs. Business—The "Veterinary Chemist" in Danger—The Unqualified Chemist at Large—The Dispensing of Poisonous Applications: A Sad Story with a Moral—The Railway Companies' New Rates and Their Reception—The Sale of Essence of Ginger.

The new year opened in London with a fairly representative specimen of our specialty in fogs. The labors of smoke-abatement inspectors and agitators have done much, it is true, to reduce the frequency and density of fogs; we no longer get enveloped in those monstrous seas of black vapors in which it was literally impossible to see the hand at a foot's distance from the face at midday. Yet fogs are still with us, and during the first week of January a thick and "greasy" variety settled down upon the city which rendered a good deal of business impossible. The drug shows, for instance, were obliged to be postponed owing to the nebulous state of the atmosphere and the strange chromatic effects it produced. The value of some drugs is of course largely determined by their color, and it was impossible to form any idea of "shades" in the absence of anything approximating to ordinary daylight. Papers are read with almost surprising regularty on the prevention of London fogs, and ingenious persons are frequently introducing to our notice infallible methods of clarifying the atmosphere, but the era of "blue skied London" has not yet commenced, nor, indeed, does it seem near.

It is perhaps an inevitable outcome of the modern spirit of commerce that attention is being given on all hands to the use of titles, and all bodies with power to confer them seem to be jealously on the lookout for anything which is even a colorable imitation of their particular degree. The Council of the Royal Veterinary College are reported to be seriously contemplating an attack upon chemists and druggists who describe themselves as "veterinary chemists." The Act under which the College defends this step declares that any unqualified person who "takes or uses the title of veterinary surgeon or veterinary practitioner, or any name, title, addition or description stating that he is a veterinary surgeon or a practioner of veterinary surgery or of any branch thereof, or is specially qualified to practice the same, shall be liable to a fine not exceeding £20. "Veterinary surgery" is defined as "the art and science of veterinary surgery and medicine."

It is, of course, hard to see how any mind but one with a legal twist can stretch this declaration so as to cover the use of the title "veterinary chemist." In these days of school-board education it can scarcely be reasonably contended that this harmless description conveys the idea that the user is specially qualified to practice veterinary surgery or medicine. In some way or other, however, a decision has been obtained that the description "veterinary forge" is an infringement of the Veterinary Surgeons Act, so that it is just possible that the new claim might be supported in the courts of law. In the meantime efforts have been made to get up a defense fund among chemists and druggists so that the question might be carried to a high court of justice, but the matter, as usual, has failed to arouse anything like general interest. Pharmacists are proverbially apathetic, and it is doubtful whether any considerable proportion of the craft make use of the title "veterinary chemist."

It would seem that pharmacists are awakening to possible advantages which would accrue by the exercise of a little more vigilance of this kind on their own part. At any rate, some amount of correspondence is appearing in which the writers call attention to the existence of unqualified persons who carry on business as chemists and druggists. The complaint is pretty general that the fault of inactivity must be laid at the doors of the Pharmaceutical Council, which is looked to to expose such evasion of the law. It must be remembered, however, that the Pharmacy Act is not conspicuous for its lucidity and directness, and that the course to be taken in dealing with offenders is not always plain sailing. There is, for example, an astonishing clause in the Act known as the "Widow's clause," which allows, most illogically, certain rights to the widows of qualified members of the craft which are refused to all other persons. This clause has always been a stumbling-block, and will be until its removal can be effected.

One of the most obviously important rules in drug-dispensing is that poisonous applications should be sent out in distinctively shaped bottles. Unfortunately this rule appears to be ignored by the dispensing practitioner —sometimes with lamentable results. The other day a medical practitioner of Nottinghamshire filled a cough-mixture bottle with aconite liniment, and the patient of course died. The reason of the mistake was that another patient of the same name was using aconite liniment which had been supplied in a bottle of the same size and shape as the one used for the cough mixture. The doctor thought the empty bottle left to be filled at the surgery was that of the liniment-using patient—a mistake obviously impossible if the rule alluded to had been adhered to.

Railway companies have obtained a reputation, in this country at least, for unvarying devotion to the main chance—in other words, to the increase of dividends by all possible means. A convincing illustration of this has recently created widespread dissatisfaction in all branches of trade, including that of the chemist and druggist. New railway rates were announced to come into operation at the commencement of this year, but, although it was expected that a small increase would be made on the charges for goods of minor importance, no general anticipation was felt that the advance would be so extensive as now appears.

It is now believed that the whole system of trading will be undermined if the new rates are adhered to, and the chemist is undoubtedly bound to feel the effects of the change. The carrying companies—a kind of middlemen between the sender and the railway companies—have had to advance their rates over 50 per cent. on monthly contracts, and also to reduce the weight limit a fourth. On the whole, however, it must be admitted that the new rates press most heavily on the transport of agricultural produce, and are not so serious in the carriage of articles like drugs and sundries which are relatively more valuable in proportion to their bulk.

Some agitation is being got up in nearly all parts of the country, and, inasmuch as the new rates have been admittedly put forward only tentatively, there can be little doubt that the burden will be eventually lightened. In the meantime coasting steamship companies and water transport agencies generally are doing increased business.

As if threatened proceedings by royal colleges of learning, and increased charges for the transport of parcels by railways, were not enough to weigh down the pharmacist, the excise authorities are adding a new anxiety to life by the suspicious eye with which they are looking upon the sale of essences for the production of non-alcoholic ginger cordials. These essences have become articles of quite a large sale in some parts of the country, and unexpectedly a chemist who has prepared the article for some years was called upon by an excise officer to "explain" the sale of a bottle which had been analyzed at Somerset House and reported to contain alcohol. This was likely enough, as the essence was made from tinctures. The spirit, of course, plays the part of a preservative simply, and the beverage which is made from the essence can in no sense be described as alcoholic. The whole matter appears to be a characteristic illustration of "red-tapeism."

BERLIN LETTER.

New Year Reflections—Cholera Prospects—Bilberry Leaves and Fruits in Medicine—Extracts of Hydrastis, Viburnum, and Piscidia—Rhus Radicans in Urine-Incontinence—The Origin of Coto Bark—The Effects of Acute Phosphorus-Poisoning—Hæmol and Hæmogallol.

The "new year" has already ceased to be a novelty, and even the least alert in mind have now fallen into the way of writing 1893 mechanically! A month has almost rolled by since the "compliments of the season" were being exchanged on all hands, and we live so fast in this age that many notable events may happen in a month. In the pharmaceutical world, however, there is nothing at all startling to chronicle. Although the preparation of complex organic bodies goes steadily forward, and processes are constantly appearing by which compounds with astounding systematic names are built up—in spite of this ceaseless synthetical activity, January has not witnessed the introduction of any striking novelty into materia medica.

The cholera still occupies a good deal of attention, not only in current medical literature but generally. Not a few very unquieting prognostications have been made as to the probable resuscitation of the untiring comma bacillus—temporarily paralyzed by the cold breath of winter—with the return of spring. There is evidence, however, that public attention has been effectively aroused to the close inter-relation of dirt and disease (including cholera), and, as a consequence, some measures are being taken to improve, before the summer arrives, the sanitary condition of those towns which have proved to be hot-beds of the epidemic.

Among products of the vegetable kingdom which do not altogether escape the influence of the spirit of investigation characteristic of our time, the bilberry (*Vaccinium myrtillus*) must be accorded a prominent place. Some time ago Prof. Winternitz reported on a case of diabetes in which, under the use of bilberry-leaf decoction, marked improvement was obtained. At the beginning of the treatment the sugar excreted amounted to 4.62 per cent., although the diet consisted exclusively of meat. In about four months this proportion had fallen nearly to zero, and occasionally actually attained that level for a time. The medication was suggested, it seems, by a peasant, and the method of preparing the dose was simple enough: Two handfuls of leaves were added to 3½ pints of water, and the whole boiled down to half the volume, which was taken daily in two portions.

Dr. R. Weil, of this city, made some further experiments with this mode of treatment, using, of course, a more refined preparation than the crude fluid-extract above referred to. The leaves were selected when young and the fruits formed. An extract was made from these which represented eight times its weight of leaves, and this was given in daily doses, beginning at 6 grains (in three portions) and gradually rising to 27 grains. The results were very good. In one patient the sugar content of the urine fell in twelve weeks from 3.12 per cent. to 0.14 per cent., and in another after a similar length of treatment 1.51 per cent. of sugar had entirely disappeared. Similarly successful was the treatment of a third case, in which the percentage before the administration of the Vaccinium extract amounted to 4.68. With adherence to a suitable diet the improved condition appears at last.

It must be noted that for the estimation of the sugar the polarmetric or fermentative methods have to be employed, as after prolonged use of the bilberry-leaves extract the urine always contains substances that exert a reducing effect on copper oxide.

A decoction of bilberry fruit has been recommended against those keratoid changes in the mucous membrane of the urethra which are not infrequently sequelæ of chronic gonorrhœa. The proportions adopted in the preparation of the decoction were one part of fruit to three parts of water. The preparation so made was injected, and after only a few days considerable change was produced in the appearance of the whitish sinew-like deposits. At intervals of two days the urethra was examined by the endoscope, and evidenced marked improvement in the condition of the mucous membrane. Simultaneously, as might be expected, with these favorable changes locally, the patients felt better in themselves.

In gynæcology, and menstrual troubles especially, a mixture of the extracts of *Hydrastis canadensis*, *Viburnum prunifolium*, and *Piscidia Erythrina* is being found beneficial; the treatment is said to be particularly suitable where local measures are contra-indicated.

Another remedy against the incontinence of urine which is sometimes so troublesome in children has been found in the dried leaves of *Rhus radicans*. A tincture is made (1:5 of alcohol) by maceration for a fortnight; and of this, children of two years are given 5 drops twice a day to begin with, increasing in obstinate cases to 40 drops *pro die*. This latter quantity is given from the first to six-year-old children. It is not surprising to learn that the remedy is not unfailing, but so far the experience recorded with it seems to warrant further trial.

The evergreen subject of the origin of Coto Bark has drawn a paper from Prof. F. A. Flückiger, the well known pharmacognosist. The statement was made not long since that a true coto-bark had been obtained from the variety of *Drimys Winteri*, Forst., distinguished as *granatensis*, Eichl. Now this shrub, as known, is the source of "Winter's bark," so called from the name of the sea-captain who first brought it to England. The Professor goes at some length into the history of Winter's bark, and briefly reviews the chemical investigations which have been made upon it and upon coto bark. He points out that neither in external appearance nor in structure does the so-called coto-bark exhibit sufficient resemblance to Winter's bark to render their confusion possible, and adds that it must therefore be emphatically stated that coto bark cannot be referred to *Drimys Winteri*.

As regards botanical origin, Winter's bark, says Prof. Flückiger, can be accurately classified, but its chemical constituents are not yet exactly known; the reverse is the case with coto bark, upon which Hesse, Rheindorff, and Cramician and Silber, as well as the author himself, have carried out careful investigations.

An exceedingly interesting study of the effect of acute phosphorus-poisoning upon the character of the blood has been made by Prof. R. v. Jaksch. The first observation made was that the number of red blood-corpuscles present in the circulating fluid very considerably increased under the initial influence of phosphorus poisoning. The author suspends judgment at present as to the cause of this phenomenon, but throws out the suggestion that it may be due to a stimulant effect of the poison upon the glands which elaborate the blood. A second effect of acute phosphorus-poisoning was an enormous diminution in the alkalescence of the blood. Simultaneously, in one case, great quantities of peptones appeared in the urine for a short time.

In a detailed treatise "On Two New Iron Preparations," Dr. A. Grünfeld, of the Dorpat Pharmacological

Institute, describes the origin and nature of "hæmol" and "hæmogallol." Both are reduction products of hæmoglobin, the red coloring-matter of the blood, of which iron is known to be an essential constituent. Hæmogallol is so called because it is prepared from blood and pyrogallol; it is an elegant red or reddish-brown powder, perfectly tasteless, and free from the disturbing effect exerted upon the digestive functions by ordinary blood preparations.

Experiments made by Busch showed that hæmogallol merited a prominent position as the most readily absorbable preparation of iron. Some experiments on chlorotic subjects gave very encouraging results, since the remedy was readily taken, did not disturb digestion, and effected the disappearance of the anæmic symptoms in a few weeks, although only ⅙-¼ grain of iron in the form of hæmogallol was given daily. This smallness of dose (owing to the complete absorption of the quantity taken) is one of the conspicuous advantages of the preparation.

Hæmol (in making which zinc-dust is used as the reducing agent) is a brown, almost tasteless powder, insoluble in water. Inasmuch as zinc is regarded as a specific in chlorosis, small proportions of the organic zinc compound may be advantageously left in the preparation. Both hæmogallol and hæmol have been sufficiently tried already in chlorosis and anæmia to warrant the belief that they will act as specifics in the treatment of these conditions. The substances can be given as powders in wafer, or taken in mixture with sugar dry on the tongue, being practically tasteless.

NEW YORK LETTER.

Wholesale druggists are in a very much more cheerful frame of mind at the present writing than when my last letter was written. Spring trade has opened up brightly, demand is active and large, and constant sales have been made. It is discoverable that during the period of depression that covered the last few months, stocks throughout the country have become very greatly reduced; which condition of affairs, now that the consumptive demand has become greater, tends naturally to activity in this central market. Very many articles have advanced, and declines have been but few.

Opium, contrary to expectation, has increased very considerably in value, and seems to be steadily getting higher. Reports during the early part of January reached this country from the section of production, to the effect that serious frosts had occurred, largely damaging the growing crop. These reports were doubted, but cablegrams more lately received seem to confirm them; if true, heavy advances in opium would naturally be realized. In anticipation of such a condition of affairs, holders have already taken advantage of the position to advance values. The price has advanced 25 to 30 cents per lb.

Morphine, in harmony with this firm condition of the market and with the increased value of opium, has been advanced, domestic manufacturers having this day issued a notice of an advance of 10 cents per ounce.

Quinine during the entire month ruled very low, and sold at prices lower than ever before known. This has been due to the large stocks held and to the limited consumption. Within the past week demand has increased, weaker holders having mostly all sold out at the low price, so that now quinine may be quoted at one cent per ounce higher than two weeks ago. Add to this the report that at the last Amsterdam sales bark went off very rapidly and at a marked advance; and there is every reason to believe that, with the very active demand that always comes to us with the spring months, holders will be able to realize possibly some profit on the stocks they have been carrying so long.

Lupulin.—This article has come into very great consumption, with particular reference to the German. The demand has been very great, and the supply so light that its value has advanced fully $1.50 per lb. over prices that ruled a month ago.

Cloves.—Reports from places of production are to the effect that they are in very light stock. There has been a great deal of speculation in them for futures, and at prices almost double those that have been ruling in the past.

Oil of cloves has consequently taken a sudden advance, and is held firmly at present values.

Guarana, an article that has been totally neglected for a long time, has suddenly come into active demand. Small parcels have all been removed from the market, so far as original hands are concerned, and better prices are anticipated.

Ergot remains in about the same condition as when my last report was rendered. The demand is exceedingly light, and stocks are large. Nevertheless, reports reach us from Germany that stocks are being rapidly concentrated there, the result of which will be seen in the advance of price when demand again comes on.

Coca Leaves.—There has been a slight reduction in the value of these leaves. Considerable amounts had been laid up at the sea-ports during the time of the cholera scare, which upon the lifting of quarantine found their way into the outer markets. We are no longer suffering from scarcity, although supplies are not very large.

Celery Seed; Coriander Seed.—Both these articles, used so largely in the preparation of pickles, are feeling the effect of heavy demand on the part of manufacturers, who are buying in anticipation of the requirements of the coming spring season. These remarks are with particular reference to celery seed. The demand is very great, supplies are small, and there are no more abroad to come forward. It is expected that within thirty days from the present this article will double in value.

Senna, Tinnevelly, is constantly advancing in price. The supplies are not abundant—no more, probably, than to carry through the year. The demand at present is mostly for the ordinary grades, while the higher grades have rarely been called for. Nevertheless, all are held very firm, with every prospect of higher prices still.

Ipecac.—The market yielded somewhat during the past two weeks, owing to the lack of demand, and also to a lack of confidence on the part of holders in London. Cablegrams just received indicate that there was no occasion for this timidity on the part of holders, but we are advised that several of the principal holders in New York have now withdrawn entirely from the market. This would indicate an improvement in price.

Buchu Leaves.—The demand for these leaves has been unusually large. During the past few months there has been little or no stock held abroad, and it is almost wanting in our market. Prices have been fully maintained, but cannot remain where they are. Very much more must be paid for buchu before the season is ended.

Anise seed continues to advance.

Tonka Beans.—There is an effort on the part of dealers in these to advance their prices, and it begins to look as though they would succeed.

Vanilla beans, owing to reports of short crop, are daily advancing in price.

New York City, Feb. 11, 1893.

CHICAGO LETTER.

The Apothecaries Society, the A. P. A., the Inter-State League, the Illinois Pharmaceutical Association, and the Jobbers' Salesmen, have jointly secured permanent headquarters in rooms 1111 and 1113 of the new Schiller Building, so that finally the dreams of some of the old-timers are realized. Chicago has a permanent Exchange where druggists can drop in (the rooms are right in the centre of the city), compare notes about prices, help, and new goods, and get acquainted with each other.

The Chicago College of Pharmacy is busily engaged fitting up a handsome dispensing laboratory.

The Illinois College is about to move into its new building. The spring term—also called the World's Fair College term—will be opened in the new building about March 15th.

The "cutting" war has as yet been confined to the down-town district; only a very few outside cutters are on the list so far, and these are due to a misunderstanding among themselves rather than to out-and-out foolhardiness—for nothing else can account for such a move. It is hoped to even bring the down-town district into line again soon.

Poisoning cases and cholera and suicides go by epidemics. New York and Chicago had almost simultaneously a morphine-quinine poisoning case; in both cases the managers of the drug stores were non-druggists. This lesson should have effect on the Legislatures. If adventurers and freebooters desire to enter the drug business for no other purpose than to make money and kill people, the law and its officers, the Boards, should intervene and stop the nuisance—for that, and nothing else, is a manager of a pharmacy who is no pharmacist.

Why is it that a man of over twenty years' experience can tell from those who enter the drug store whether they mean business or are candidates for accommodations? Your correspondent has won a bet three times this month on that score—and got the hard cash, not the mere economical bluffs. A postage-stamp customer, or a directory seeker, or an inquirer after the Reverend Faithful Jones' sermon hours, will in ninety-nine out of a hundred cases leave your store door wide open; and then he doesn't come to you, but expects you to leave your work and go to him. I am great on political economy (not the Clark-street concern), and I figured out that a two-cent stamp bought by such a customer causes a displacement of 9,000 cubic feet of warm air by cold air—costing the store-keeper, with the price of hard coal at $7.50, exactly 18$\frac{32}{100}$ cents for each two-cent stamp. Now let your Scientific Department analyze the whyforeness of this thusness, and we may yet discover a patent medicine that all cutters will agree to sell at full prices to remedy these chronic cases of gento-deadobitis.

The Chicago branch of the Inter-State League had a well attended meeting early in February, and discussed ways and means to enforce the A. P. A. plan. In view of the fact that jobbers refuse to certify to the "cutting" done by several retailers; that the A. P. A. plan only went into effect after the Montreal meeting; that Chicago dealers started to cut before the stipulated 50 per cent. of retail dealers had signed; that jobbers who faithfully promised to refuse to sell goods to cutters, subsequently sold to them under assumed names—considering all these things, it is a wonder that the men at the helm of the League have not deserted their posts in disgust. Further than this, the cutter—the arch-cutter, supported by his faithless jobber friend—is so well informed about every movement made by the League that it is evident he has spies among the retailers; and not until this hole is discovered and plugged can any efficient work be expected.

When the League meeting adjourned, the druggists held a little mass meeting. Then and there they agreed to petition the Legislature to reduce telephone charges, to so change the Pharmacy law as to prohibit non-pharmacists from posing as managers of drug stores, and to divorce pharmacy from saloons. Then they adopted a resolution denouncing the paper founded by Wilbur F. Storey and now being "run" by Carter H. Harrison, for its unwarranted attacks on the entire profession of pharmacy. When the *Times* claims that one-dollar patent medicines cost the druggists 25 cents, it shows either ignorance or the dictation of drug-advertisers; and when it circulates stupid and misspelled prescriptions, its intent to kill with malice aforethought would be clear to any jury outside of jail or a lunatic asylum.

Commenting on the action of the druggists, the Chicago *Tribune*, Tuesday, Feb. 7, says:

> It was pretty clearly indicated at the meeting of the retail druggists of this city Saturday that Carter H. Harrison is not their ideal as a candidate for Mayor, even if he is held in high esteem by "store-keepers" of another class. The articles attacking the prices of drugs which have appeared in the *Times*, Mr. Harrison's paper, were discussed, and while no definite action was taken it was clearly the sense of those present that any other man would be more acceptable as Mayor than Mr. Harrison. There were 250 druggists at the meeting. The druggists of Chicago exert a wide influence, and when they take a hand in a political fight they have a good deal to say about what the result will be.

In closing this letter I cannot do better than request a careful consideration of the views expressed by Mr. Sempill, of the firm of Dale & Sempill, to a reporter of the Chicago *Herald*. The argument for fair prices, and the attitude of the retailers in the League towards the cutters after the war has been fully inaugurated, are so well expressed that I subjoin Mr. Sempill's remarks, which appeared in the *Herald* Jan. 15, 1892:

> "Now," continued Mr. Sempill, "I want to tell you a little something about the war inaugurated by the down-town retail druggists, in which I have been forced to take a part. I am not cutting prices. I am merely meeting prices of competitors wherever they may be. Every article in this store, patent medicines, toilet articles, and the thousand and one articles you see on my shelves, have been marked down to meet the prices of competitors to-day. If to-morrow they make another reduction in these articles, I will do the same. But on prescriptions I do not propose to make any reduction, for two reasons. The first is that my prices are not too high, making but a fair profit, and the public will find that the reputable and responsible drug stores will not fill prescriptions any lower than what I do. The second is that, should I slash prices on prescriptions, the physicians of this city would lose confidence in this store, which has been in existence for thirty years and more. I cannot afford to do that.
>
> "I could say that I am reducing prices on prescriptions, but how can you or any one else determine that I am keeping faith? It is such an easy matter to use inferior drugs or use substitutes in compounding prescriptions that I do not propose to enter into competition in a field where such wide scope is given without any positive knowledge of it coming to the public.
>
> "The fact that reputable druggists throughout the city have charged the same prices practically for prescriptions I have been charging for all these years, is evidence sufficient that only a fair profit has been made after deducting expenses for rent, wages of reliable prescription-clerks, and responsibility we are obliged to shoulder in the conduct of this very important branch of our business, which deals directly with the life and death of thousands of people daily.
>
> "No matter how much lower competition may force prices with goods on my shelves I will meet them, but in the prescription department honest competition has already forced prices to the lowest notch, and any lowering of present prices will simply mean a lowering of the quality or substitution of drugs used in compounding prescriptions."

Old Liner.

Chicago, Feb. 11, 1893.

MENACE IN CUT RATES—CHEAP DRUGS MAY PROVE COSTLY.

[From the Chicago Herald, Feb. 12, 1893.]

People who use pills are pleased that the merry war of the druggists still rages. To them there is but one side to the shield. Quinine is quoted at prices within the reach of all, and that settles it. Let the average Chicagoan make up his mind that he is getting the best of the bargain and he will buy while his purse holds out. To the doctor who is not a quack, to the druggist who is worthy the name, there is menace in the cut-rate fight, however.

"Drugs are a peculiar commodity," said a prominent physician yesterday. "Who can tell what he is buying when he buys a bottle of physic or a box of pills? Certainly not the average man. What then is there to prevent the druggist cutting on quality in proportion to his cut in price? All who are posted know there is a wide difference in drugs. For instance, oxide of zinc may be bought for 60 cents a pound, wholesale, and oxide of zinc may be bought for 12½ cents a pound, wholesale. To all appearances both grades are the same. An amateur cannot tell the difference. Then how does he know, when White sells it to him for 80 cents a pound and Black sells it to him for 40 cents, that Black is giving him a bargain? He don't, and that's just where the peculiarity of the drug business comes in.

"Take the catalogue of a wholesale drug house and run over the prices quoted. Among them you may find some variations which surprise you. Here is chloroform at 60 cents per pound and chloroform at $1.40 per pound; tannin at 8 cents an ounce and at 26 cents an ounce; turpentine at 57 cents per pint and turpentine at 45 cents per gallon; bicarbonate of soda at 3 cents per pound and at 36 cents per pound; carbolic acid at 23 cents per pound and carbolic acid at $1.80 per pound—and so on *ad libitum*.

"Perhaps you say: 'How can I tell when I am getting the cheap drugs and when the best?' Well, in one sense you can't, but the man who is looking for the best does not usually go to the cheapest house he can find, the house with no reputation or the house whose only reputation is its cheapness. Of other commodities you can judge. You buy clothes, and you examine the quality of the cloth before buying. You buy shoes and you note how long they wear. But who can judge the quality of drugs? It is these suggestions that make one look askance upon a war in drug prices.

In buying drugs the layman has but one thing to depend on, and that is the reputation of the concern he patronizes. If he purchase drugs simply where he can buy the cheapest, he has no guarantee of their worth, and he may be taking his own or perhaps another's life in his hands.

"It is claimed that the profits in the drug business have been too large. Well, perhaps that is so, but a moment's consideration may present the matter to us in a different light from that in which we have seen it before. A druggist sells his goods in small quantities. His usual sales will average up well with those of the 'notion counter' in a large department-store, but he cannot trust to the same class of clerks to dispense the dime's worth of aqua ammonia, the nickel's worth of arsenic or the quarter's worth of chloroform that the dry-goods merchant employs to sell a 5-cent paper of needles or a 10-cent pair of corset steels. The druggist must employ a high-priced man to dispense these driblets—a graduated pharmacist.

"A thoughtless newspaper attempted, a short time ago, to show the profit on a prescription, and figured simply on the cost of the ingredients. Nothing was allowed for the skilled labor necessary for compounding them. And yet who would be satisfied with a prescription compounded by any but a qualified pharmacist? What man with a sick wife or a sick baby cares to save 20 cents on a prescription and know that it was put up by a $6-a-week boy?

"Again, speaking of the druggist's profit, who ever saw a drug store crowded as are other retail stores? But the skilled clerks must be there just the same, not only during business hours, but frequently all night, or, if the store is not kept open all night, a clerk must sleep near by so that he can be called up in the middle of the night or at any time that suffering humanity needs his wares. All these things add largely to the expense and detract from the profits of the drug business. And yet how few people reflect on them!

"Of course, patent medicines are somewhat different. Anyone can dispense them, and White cannot say that his 'Hood's Safe Cure' or 'Carter's Porous Plasters' or 'Alcock's Little Liver Pills' at regular rates are any better than Black's at cut rates; but on these things the druggist must make some profit. His business is necessarily more expensively conducted than almost any other retail business, and he must make a profit on these that he may keep his expensive clerks to compound our 25-cent prescriptions, sell us our postage stamps and our nickel's worth of arnica, and insure to us only the best drugs, reliably compounded."

Until the war is over, the conservative and sensible man will probably continue to patronize the reliable druggist, whose prices are a little higher, but whose reputation is worth more to him than the few dollars saved on cheap drugs; and he will feel himself well repaid for the little additional expense by the knowledge that his wife is not taking six ounces of fluid arsenic and one drachm of aqua distilled instead of the reverse, that he is not consuming two grains of cheap flour and one grain of quinine whenever he takes a capsule to break up his cold, and that the sugar-of-lead which his wife uses to set the color in his fancy shirts is not marked "For internal use."

DOWN WITH THE WHISKEY TRUST.*

Editor BULLETIN OF PHARMACY:

DEAR SIR—I beg to call your attention to the Scott bill, increasing the tax on distilled spirits from 90 cents to $1.25, a copy of which you will please find enclosed. I send also, as bearing on this subject, protests of the Philadelphia Drug Exchange, of the Drug Section of the New York Board of Trade and Transportation, and of the National Wholesale Druggists' Association. It is a matter of common report that this bill, which will increase the price of alcohol and medicinal preparations containing alcohol, is in the interest and at the instigation of the Whiskey Trust. Believing that it should have the opposition of the pharmaceutical profession, I respectfully bespeak your influence against this bill in the columns of your valuable journal.

Yours respectfully,
B. T. FAIRCHILD,
Chmn. Legislative Committee Nat'l Wholesale Druggists' Ass'n.

DECIMALS THE ULTIMATE DESTINY.

Although five minutes' explanation should suffice to demonstrate to the meanest understanding the fact that the decimal system of reckoning is simplicity itself as compared with the chaos of English weights and measures, Englishmen still persist in looking on decimals as abstruse and difficult, and on those who advocate their introduction as nothing better than amiable "faddists." But the force of facts is at length making itself felt even among Englishmen. The Japanese Government, for instance, sends its orders for iron and steel goods not to England, where they are acknowledged to be of the most genuine quality, but to Germany and to France, simply because the weights and measures of wares manufactured in those countries can be absolutely depended upon, being all weighed and measured on the French decimal or metric system. And now even the Government of Peru requires that the weights of all goods imported into that country shall be stated on the invoice in the same metrical system. It is clear that, in this way, England will be compelled to adopt decimal reckoning in her foreign trade if she is to retain that trade in the future. Its employment at home will then be a mere question of time. L. S.

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*A comprehensive abstract of the protest of the Drug Section of the New York Board of Trade and Transportation, together with general and particular comments, will be found on page 55.

London, Eng., Jan. 30, 1893.

IMPORTS OF DRUGS, ETC., AT THE PORT OF NEW YORK, FOR THE MONTH OF JANUARY, 1892.

Aloes, 461 boxes, 261 bags, 16 cases.

Anilin oil, 128 drums, 26 casks; anilin, crude, 17 casks, 1 case, 34 bbls.; anilin salt, 65 casks, 335 cases, 169 bbls.

Aërated water, 25 cases. 25 bbls.

Arrowroot, 500 tins, 5 bbls.

Anise seed, 25 bales, 56 bags, 1 package.

Attar of roses, 3 cases.

Arsenic, 390 kegs, 740 casks, 889 bbls.; arsenic acid, 15 drums.

Almond oil, 20 cases.

Acid, 3 cases, 27 casks.

Alum, 6 bags.

Alizarin, 63 bbls., 73 casks; anilin and alizarin, 104 packages; alizarin and anilin dye, 130 packages.

Ammonium muriate, 90 casks; sulphate of ammonia, 4,458 bags, 1,171 boxes; carbonate of ammonia, 75 packages; sal ammoniac, 88 casks.

Alkali, 134 packages, 355 casks, 160 bags.

Albumin, 34 casks, 80 cases; blood albumin, 10 cases; egg albumin, 21 cases.

Barium chloride, 72 casks.

Balsam of copaiba, 36 bbls., 5 boxes, 26 cases.

Borax, 16 cases, 11,690 sacks.

Bark, 138 bales, 24 bbls., 22 straps, 56 packages.

Buchu, 17 bales; buchu leaves, 10 bales.

Boracic acid, 53 casks.

Chloride of lime, 95 drums, 160 tierces, 20 casks.

Chloride of zinc, 10 casks.

Chemicals, 653 cases, 614 casks, 70 packages, 47 bbls.; crude chemicals, 2 cases; chemical preparations, 2 casks.

Chemical balances, 3 boxes.

Cacao butter, 130 bales, 269 bags, 72 cases.

Coca leaves, 17 bales.

Cubebs, 187 bags.

Cod-liver oil, 400 bbls., 187 cases.

Chamomile flowers, 8 bales, 42 cases.

Camphor, 255 tubs, 288 cases.

Cardamom seed, 1 case.

Colocynth, 15 cases, 25 bales.

Coriander seed, 100 bags.

Castor seed, 4,023 bags.

Cocaine, 6 cases.

Chloroform, 1 case.

Cassia, 2,000 mats, 1,000 bales; broken cassia, 2,750 bales; cassia oil, 50 boxes; Saigon cassia, 600 cases.

Creolin, 77 cases.

Carbonate crystals, 560 bbls.; crude carbonate, 5 casks.

Carbonic acid, 525 tubs.

Citrate of lime, 25 cases.

Drugs, 76 cases, 41 bales, 12 kegs, 440 packages, 1 cask, 17 bags.

Druggists' sundries, 2 cases.

Dried blood, 229 bags.

Dried flowers, 1 package.

Essential oil, 50 packages, 65 cases, 2,271 bbls.

Eucalyptus oil, 10 cases.

Ethereal oil, 10 cases.

Eau de Cologne, 38 cases.

Echappe oil, 50 drums.

Fennel seed, 10 bales.

Flower water, 35 cases.

Fish sounds, 22 bags.

Fuller's earth, 3,439 bags.

Glycerin, 764 drums, 593 casks, 125 cases.

Glycerin soap, 12 cases.

Galls, 109 bags.

Gum senegal, 35 bales.

Herbs, 234 bales, 19 cases, 98 packages, 5 bags; herb extract, 1 case; herbs and flowers, 60 bales.

Henbane, 12 bales.

Haarlem oil, 83 cases.

Iodine, 305 bbls., 5 kegs.

Insect flowers, 48 bales.

Juniper berries, 130 bags, 250 bales.

Jalap, 19 bags, 20 sacks.

Leaves, 125 bales; medicinal leaves, 26 bales.

Liquorice, 67 cases, 17 bales; liquorice root, 51,892 bales.

Lavender flowers, 4 bales.

Laurel leaves, 26 bags, 62 bales.

Medicine, 7 cases; medicinal seed, 8 sacks; medicinal flowers, 10 bales.

Milk sugar, 55 cases, 140 packages.

Myrbane, 2 drums, 50 cases; myrbane oil, 20 drums.

Musk, 2 boxes, 1 case.

Magnesia, 10 tierces.

Malt extract, 22 casks, 2,017 cases.

Nux vomica, 1,160 bags.

Natrium, 195 casks.

Naphthol, 10 bbls.

Oxalic acid, 85 cases, 1 keg.

Orris root, 20 bags, 20 bales.

Opium, 86 cases.

Potash, 246 casks, 20 kegs, 78 bbls.; muriate of potash, 9,108 bags; carbonate of potash, 40 casks; chlorate of potash, 800 kegs; prussiate of potash, 123 casks; sulphate of potash, 5,080 bags; bichromate of potash, 61 casks; bicarbonate of potash, 15 bbls., 10 casks.

Perfumery, 177 packages, 103 cases, 75 demijohns.

Precipitated chalk, 20 bbls., 20 casks, 40 packages.

Pharmaceutical products, 19 cases.

Phosphorus, 10 cases; phosphoric acid, 11 cases.

Phosphate, 10,000 bags.

Quinine, 247 cases.

Quillaia bark, 175 packages.

Roots, 13 cases, 486 bales, 45 bags, 52 packages; dry roots, 127 bags; roots and herbs, 20 sacks.

Rosin, 1 box.

Rape oil, 360 bbls.

Rose-water, 25 cases.

Soda, 614 bbls., 18 cases; arseniate of soda, 20 casks; bicarbonate of soda, 334 bbls.; chlorate of soda, 200 kegs; nitrate of soda, 16,698 bags, 15 casks; salts of soda, 1 case; sulphate of soda, 8 casks; crystal soda, 2,007 casks; bichromate of soda, 80 casks.

Sassafras oil, 4 drums.

Sarsaparilla, 212 bales, 10 bbls.

Salts, 34 packages, 46 casks, 25 cases.

Sponges, 1,473 bales, 942 cases, 40 bbls., 8 bags, 9 nests, 1 package.

Senna, 105 bales; senna leaves, 15 bales.

Solid carbolic acid, 67 casks.

Sesame oil, 95 bbls.

Salts of lime, 5 casks.

Tartar, 133 bags, 67 bbls., 386 casks, 40 cases, 1,293 sacks; crude tartar, 130 bbls., 216 bags, 118 casks.

Tinctorial extract, 35 casks, 200 cases.

Toilet powder, 8 cases.

Thyme oil, 7 cases.

Vitriol, 8 drums; zinc vitriol, 16 casks.

Ylang ylang oil, 2 cases.

Zinc oxide, 275 casks.

A Text-book of Practical Therapeutics, with special reference to the application of remedial measures to disease and their employment upon a rational basis. By Hobart A. Hare, M.D., B.Sc., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, etc. Philadelphia: Lea Brothers & Co. 1892.

This is a good book to have. It is written by a medical man for the use of medical men, and therefore the pharmaceutical part does not receive the same editorial care and accuracy which from careful scrutiny we consider that the purely therapeutical part has received; but yet we can see that this latter is what may be of the most service, after all, even to the pharmacist. To begin to enumerate the good points which we see in the work before us, we might, first of all, notice what to some may seem an unimportant matter, viz., the correct use of the term "official." This is applied, as it properly should be, to drugs and preparations of drugs which appear in the U. S. P. The word "officinal," so frequently used in this connection, should be discouraged, as it simply means "of, or belonging to, the store," and has no reference whatever to the citation of the drug or article in any work of authority such as a Pharmacopœia is conceded to be. The book brings a great deal of information on many drugs quite up to date, especially with regard to physiological action, and the placing of these consequently in the list of scientific rather than empirical remedies. As a step towards scientific medication we notice (p. 28) that the author expresses himself very strongly in favor of the use of "assayed products." Were we, however, to continue praising the book without finding fault somewhere, we would not be doing our full duty, because from a pharmaceutical standpoint we certainly see some objectionable features. The first that forces itself upon us is the lack of consistent alphabetic handling which is evident in the arrangement. We refer to the fact that one is never sure of where to look for any particular article, more especially if it be a chemical, because the alphabetic arrangement has no very evident system. All mercury salts are grouped and come under "Mercury," even calomel being subordinated to this general grouping of the basic name. Similarly grouped are the salts of iron, ammonia, and copper. If one wishes, however, to find any salt of potassium, it will have to be looked for under its adjectival name, the acetate under Acetate, the bromide under Bromide, and so on with each individual salt. We said all the salts of mercury would be found together, but we will have to qualify this, for on looking further we find a solitary one, Salicylate of mercury, appearing under that alphabetic order. All salts of bismuth appear under Bismuth, except the benzoate which is described under Benzoate, although the benzoate of ammonia is described under Ammonia. Bromide of ammonia and the iodide of ammonia are distinguished by being paragraphed twice (pp. 60 and 98, and 63 and 199, respectively), although only indexed once; the dose of the latter in one place reads 2 to 10 grains, and in the other 2 to 3 grains.

It may be interesting to our readers to learn that "Apiol is imported from France in capsules containing a little less than three minims"—no mention of capsules of American manufacture! It may also be of interest to learn that "Flexible collodion is made by adding turpentine five parts, and castor oil three parts, to ordinary collodion." How much of the ordinary collodion is to be taken the author does not say, but even if he did we are afraid the turpentine would spoil his formula—Canada turpentine is evidently intended. There is a point regarding which we would both direct the attention of the author and also caution any prospective readers of the book; namely, that a number of articles are mentioned in the body of the work under one name, such as Jequirity, Azedarach, etc., for which no synonym is found in the index. It would take but little more room to put on record the scientific name of these articles, in order that those who wish to consult the work as a reference may find that the articles are mentioned in the work by consulting the index. As it is, however, one who may wish to consult the work to see what may be said with regard to Jequirity under its botanical name, *Abrus precatorius*, may, on consulting the index under that name, throw the book at once aside as not containing the article of information of which he is in search. It takes but little room to place such synonyms in an index, and there is all the more reason that they should appear there when, as in the case before us, the synonym has been previously mentioned in the body of the work. Take, for instance, as another example, nitroglycerin (p. 250); the synonyms "trinitrin" and "glonoin," although appearing in page mentioned, are not to be found in the index. We think that the value of the work as a reference is impaired by such omissions.

There are a number of drugs that may be said to belong to the newer materia medica, but which are now so largely used in this country that we are somewhat surprised that the author has not incorporated any mention in them, as they certainly belong to the "practical therapeutics" of to-day; such, we may instance, are Yerba Santa (*Eriodictyon glutinosum*, Benth.), Pichi, etc. Some are retained by the author, even when he is not able to give any definite information concerning them, which to our certain knowledge are to-day obsolete in the therapeutics of this country; such, we may instance, are represented by Thapsia. The ordinary druggist may wonder why such articles as Roman chamomile, prickly ash, poke-root, pleurisy-root, tolu balsam, Peru balsam, Berberis aquifolium, blue flag, burdock, corn-ergot, couch-grass, cranesbill, damiana, etc., etc., are omitted when he is aware that they are of equal importance therapeutically, and in many cases much more important commercially, than some that have been retained by the author. Again, the author is not very consistent, we fear, in his treatment of some names which we think should appear in his index; for instance, in Part IV (Diseases), we are told, under the heading of Abortion, that "the only drug which seems to be of any service as a prophylactic to be taken all through pregnancy is the fluid extract of Viburnum prunifolium." We might naturally expect, therefore, that Part II (Drugs) would mention Viburnum prunifolium, but there is no mention whatever of this name in any other part of the book, neither is it in the index. Jambul, mentioned also in Part IV (page 422), is certainly omitted in Part II, neither is it to be found in the index; the same happens in the case of zinc sulpho-carbolate. Jamaica Dogwood, indexed as appearing on page 29, should read "page 283."

We started out with saying that the book was a good one to have, and in spite of these many minor faults we still think that the work has sufficient merit intrinsically to justify our recommendation, although we trust that if a second edition be called for, the author will not fail to remedy the mechanical imperfections which we have above indicated. G. S.

A Bibliography of Australian Economic Botany. Part I. By J. H. Maiden, F.L.S., F.C.S., etc.; Curator of the Technological Museum, Sydney; Consulting Botanist to the Forest Department of New South Wales, etc. Sydney: 1892. 1s. Chas. Potter, Government Printer.

The title of this work is almost sufficient to convey to any reader who is at all interested in economic botany, the idea that here must be embodied the results of a very great deal of painstaking research if the subject has received justice at the hands of the author. A very careful examination of Part I, before us, has not failed to thoroughly satisfy our anticipations in this respect. We cannot, of course, expect to interest our readers by giving extracts of otherwise meaningless titles of books, names of authors, etc.; it will be sufficient to say that wherever we have tested the "Bibliography" for information regarding Australian products which to our knowledge had been published within recent years, we have not failed to find that the same was here securely placed on record. The readers of the BULLETIN OF PHARMACY may remember, for instance, that in our columns two years ago we pronounced against the so-called alkaloid *drumine* that was claimed by Dr. Reid, of Melbourne, to have been obtained by him from *Euphorbia Drummondii* and alleged to produce a local anæsthesia superior to cocaine. We said that the article was nothing but calcium oxalate; and simultaneously, almost, the *Pharmaceutical Journal and Transactions* published the same results. This, we find, is noted by the author of the Bibliography. We would recommend the purchase of the work altogether apart from the flattering fact that the BULLETIN OF PHARMACY is one of the few American pharmaceutical journals which, as the author states in the Preface, he has found "to contain notes (more or less voluminous) on Australian economic botany."

The present part groups so exhaustively all branches of economic application of plant products that we are at a loss to know what there remains to be added to the work before us in the shape of a prospective Part II. We merely indicate a few of the sections that are of more technical interest to our readers: 6. Poisons to Stock; 7. Drugs; 8. Eucalyptus Oils and Eucalyptus in general; 9. Perfumes and Essential Oils other than eucalyptus; 10. Gums; 11. Resins; 12. Kinos; 13. Mannas and Lerp; 14. Dyes; 15. Tans.

Vegetable Exudations. By J. H. Maiden, F.L.S., F.C.S., Curator Technological Museum, Sydney, N. S. W; Botanist Forest Department, Sydney.

This is a record of the vegetable exudations brought home by the Elder exploring expedition, and contains some interesting notes of the gums, resins, kinos, and one true manna which were collected by the party. The manna, we learn, "is a perfect substitute for its European namesake;" its botanical source is said to be *Myoporum platycarpum*, R. Br. One of the gums, we are pleased to learn, is "a perfect substitute for gum arabic," being readily and entirely soluble in cold water; its botanical source is *Acacia leiophylla*, Benth. Since very much of the territory of the island continent is characterized by just such climatic conditions as prevail in northeastern Africa, the present (and, we may add, the precarious) source of gum arabic, we see no good reason to prevent the Australian colonies developing trade in this native article by giving systematic cultural attention to the shrub.

'S Lands Plantentuin, te Buitenzorg. 18 Mei 1817—18 Mei 1892.

A book of lasting merit. The *Hortus Bogoriensis* is a living testimony against the "practical" people. Botanic gardens are looked upon by many of these as rather ornamental than useful. But more and more the "oracles" will be reduced to their proper rank as, by the influence of such histories as the one now on my table, broader views on the need of more science and less "practical" pretense in pharmacy are established. *Noblesse oblige.*

J. B. N.

[WRITTEN FOR THE BULLETIN OF PHARMACY.]

A SMOOTH BORE, SMALL CALIBRE.

Old Jedediah Johnson is an antiquated bore;
Diurnally he visits the apothecary store
That I and Bill Cozambulantz set up in '92
(Corner of Sixth and Adams—drop in before you go).

He calls at 2 P.M. and stays till all the lights are lit,
And after supper comes again. I think th' old gent is fit
For some insane asylum—well, to be completely fair,
I'll simply say he's often made me fancy *I* was there.

I'm thoroughly convinced he'll keep on calling until spring,
And never buy—he never has—a solitary thing.
He leans up on the show-case, and strokes the old cat down,
And then he sighs a little bit, and says: "I ain't allowin'

That these 'ere days o' flashy stores an' bang-up clerks an' sich,
W'en all you think you got to do's to start a store 'n get rich
A-loafin' round the sody-fountain till the job is done,
Kin equal th' *extry-ordinary* days of '61! (No, indeedy!)

Then blue-pills an' ipecac, whiskey an' quinine
Jes kep' the clerks a hustle-un! 'Twan't quite so fine
In Eli Perkins' store," he mused, "as this o' yourn, I know—
No tile floor, no lightnin' lamps, no 'quariums for show—

But Eli got there just the same. An' O! the times we hed
A-settin' round the hick'ry fire till time to go to bed,
Waitin' for the telegrams f'm M'nassess an' Bull Run—
Could hear the shells explodin' like in eighteen sixty-one!"

"And where was you in '61?" I said to him one day;
"Did those explosions happen in the ordinary way,
Or did you see them, as it were, ah—hypo-thetically—
And hear by means of fancy's fine tympanic cavity?"

"Wot's *that?*" he said, and let the cat slip down and out the door,
And drew his bony body up as if he owned the store:
"Young man, I'd have you understand that Johnson knows wot's wot,
An' ruthern' plunk hisself in front o' rebels to be shot,

He cultivated peace, ah-h!—put £40 and more
In drugs, and sold 'em to repair the ravidges of war;
And out o' that investment—profits paid by Govimment—
He lives to hip hurrah for them 'at to the battle went.

Let them go as wants to go, and them 'at wants to stay
At home, w'y, let 'em stay, an' nothin' said—that's wot I say.
Ef Jed had gone to war he'd like as not been in his grave
By this time."
                    And then the speaker took a seat to save

His strength, for these exciting reminiscences, he said,
Just made him live war times again, and flew right to his head.
In fact, I had to brace him up with half a gill of sling
And charge it on the ice—he never buys a single thing.

What I started out to say, and still the same I'm saying:
Jed stayed; he stayed again; he still continues staying.
Do I smile? he smiles again. Frown? he doesn't care.
Whatever he may not be, he's certainly a stayer.

Drug stores are public places—is it not a fact?
Jedediah says it is (but Jed, perhaps, is "cracked").
Postage stamps, directory, telephone, and more
Make him think the place a tavern—O the frightful bore!

—KOSMO LEAN.

ONE ON THE DOCTOR.

Doctor (handing receipted bill)—Now you will be a perfectly well man if you can be persuaded to diet yourself for a couple of weeks.

Patient (as he pays over his last dollar)—*Persuaded* to diet myself! Lord, doctor, I'll *have* to!—*Puck.*

WHAT ARE WE COMING TO?

In a recent issue of a Detroit morning paper a local druggist advertised "best basket-fired Japan at 40c. per lb., and a carload of potatoes by the bushel at lowest market price." In view of this, it is certainly justifiable to suggest something like the following as among the possibilities of the near future:

ALL THE NOVELTIES!

Buy your Groceries, Meats, Confections, Liquors, Real Estate, Hairpins, False Teeth, Boots and Shoes, Clothes, Furniture, Live Stock, Jewelry, Folding Beds, Tobacco, Hardware, Carpets, Machinery, Paints, Cameras, Buggies, Locomotives, Fancy Dress Costumes, Bibs, and Dynamite.

Where you can get them Cheapest!

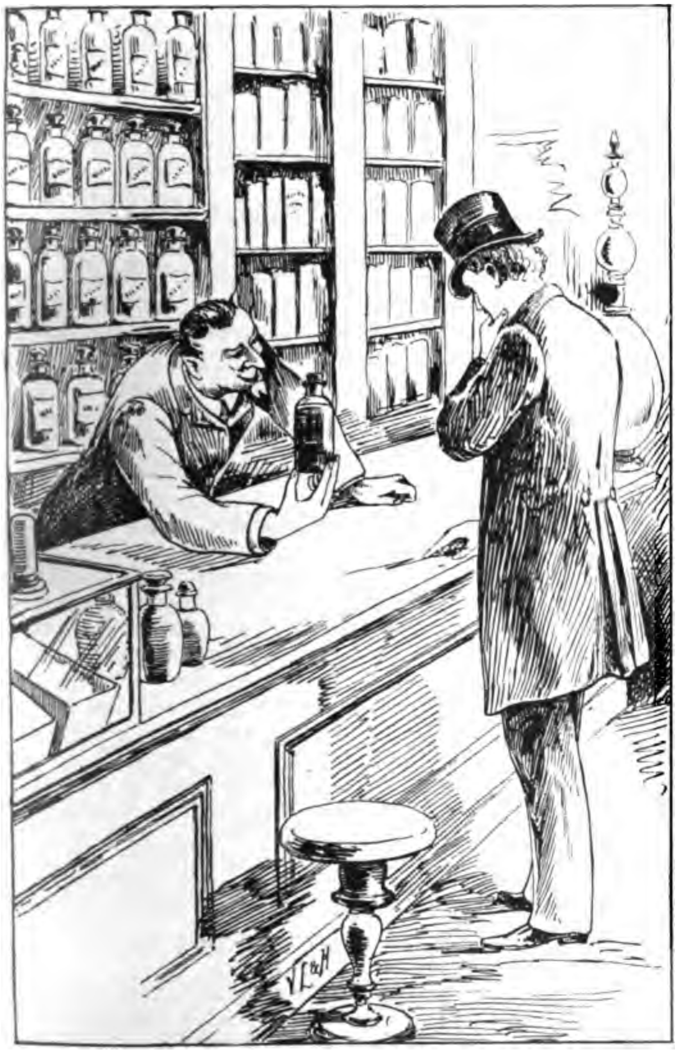
WHERE IS THAT?

At

WATTS INNA NAME'S,

Druggist and Pharmacist.

N.B.—To every purchaser of $1 worth of my goods I give one 16-oz. bottle of good physic (100 varieties) or a half-dozen powders (choice of 100 different kinds).



THE SUBSTITUTOR.

"It is just as good if not better."

A patent-medicine advertisement describes the patient it guarantees to cure as "nervous, restless, fretful, and has sleepless nights, from which he awakes tired and exhausted." A medicine that will cure a man who "awakes from a sleepless night," warrants all that is claimed for this one.

ABSTRACTS & TRANSLATIONS.

Saccharin.*

An industry still young, but unquestionably with a great mercantile future, is that of saccharin, a product of coal tar. It is a substitute for sugar, has none of its bulk, and is so powerful that it is three hundred times sweeter. The history of its discovery is interesting.

In 1879 Dr. Constantine Fahlberg, a Russian by birth, but who had been educated in Germany, became connected with the Johns Hopkins University, in Baltimore. There he conducted a series of experiments on the toluene sulphamides, in order to investigate their oxidation products. The outgrowth of this investigation was the discovery of saccharin. By oxidizing pure orthotoluene sulphamide it was found that it would yield a remarkably sweet compound. The amount obtained, however, was too small to be of any practical value for manufacturing purposes. The problem thenceforth was to find other reactions which would give a better yield of the sweet body. A long and exhaustive series of laboratory experiments extending through several years were necessary for the satisfactory development of the chemical process of production. What saccharin really is, can best be answered by Dr. Fahlberg himself. In a paper read before the British Association at Manchester in 1887 he defines saccharin as—

> An inner anhydride of orthosulphamine-benzoic acid, which yields salts and ethers entirely different from the orthosulphamine-benzoic acid; in fact, I have succeeded in transforming one into the other, and *vice versa.* If orthosulphamine-benzoic acid be heated, it changes into saccharin with the elimination of water; if, on the other hand, saccharin be subjected to a current of hydrochloric acid gas in the presence of alcohol, the ether of orthosulphamine-benzoic acid is formed, which also yields, on heating, saccharin, with the exception that in this case not water but alcohol is eliminated.

As might be expected, a discovery of such practical utility had to run the gauntlet of much hostile criticism. It formed a fruitful subject for discussion in various scientific societies and journals. Attempts were made to show that it was not only deleterious, but dangerous. It is only fair to say, however, that these arguments seem to have been successfully controverted. An overwhelming mass of expert testimony is recorded in favor of saccharin. Eminent professors like Sir H. E. Roscoe, in London; Leyden, in Berlin; Paul, in Paris; von Barth, in Vienna; and a host of others, after thorough tests, have certified that the effects of saccharin upon the physical and psychical functions of the brute and human systems are entirely harmless.

Saccharin in its pure condition is a white powder. Various exclusive advantages are claimed for its use in the arts, household, and medicine. To enumerate a few: It is so small in bulk that the saving in storage and freight is, of course, very great; its valuable antiseptic qualities make it especially available in preserving, as well as sweetening, articles of food, such as jellies, fruits, etc.; its non-fermentable character. In the distilling of brandies and liquors and in the brewing of beer, saccharin has been used with signal success. Mixed with glucose, saccharin has a sweetness equal to the finest refined sugar. Further, saccharin serves a distinctly medical purpose. It is employed to disguise the unpleasant taste of medicine and in the preparation of medicated wines and other cordials. It has also been highly indorsed as a substitute for sugar for those suffering from diabetes and from fatness. Unlike sugar, it does not go to form surplus nourishment. Finally, it may be added that this highly concentrated sweetening substance requires only a little intelligence to be successfully used in the household.

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*Report by United States Commercial Agent Washburn, of Magdeburg.

Saccharin should never be taken in a pure state. Some idea of its power will be conveyed when it is understood that one part of it will give a very sweet taste to ten thousand parts of water. Tasted in too large a quantity, as Dr. Fahlberg observes, it acts upon the nerves in such a way as to paralyze the sense of taste, just as powerful music stuns or deadens the auditory nerves, or a bright light acts upon the optic nerves.

Dr. Fahlberg has, in connection with his partners, devoted himself of late years to the placing of this commodity on the market in practical form. It is manufactured and put up in three ways, viz., pure saccharin powder, easy soluble saccharin in gravel form, and saccharin tablets. The two latter preparations contain a small percentage of bicarbonate of soda and are more available for cooking purposes.

The factory—and, so far as I am informed, it is the only one of its kind existing—is at Salbke-Westerhüsen, on the Elbe.

Patents have been obtained in most civilized lands, and monopolies of sale (which debar the manufacturers from selling direct) exist in many countries, including the United States. The American agents are J. Movius & Son, New York. Up to the present, however, the American trade has been inconsequential. In 1891 the export to New York was only about eight hundred kilograms (1,800 pounds approximately), while during the same period 7,200 kilograms were shipped to England. I understand that the owners would erect a factory in the United States should the state of the trade ever warrant it.

Cicuta Maculata, Linne.

This plant is known under the common names of Water Hemlock, Spotted Cowbane, Beaver Poison, etc. It is found throughout the eastern United States, and flowers during July and August. The stem dies down after fruiting, but a bud and new tuberous roots are formed from a lateral branch, and a new stalk rises from these the following spring.

The root is oblong, fleshy, of a brownish color, with from three to eight thick fleshy branches which grow in an oblique or horizontal direction. The interior of the root is yellowish white, and contains many cavities, which are probably formed by absorption of the tissue; this is an important characteristic, and is best seen in longitudinal section.

The odor is aromatic, resembling that of parsnip.

The taste is aromatic and sweetish, with an acrid after-taste. On cutting a cross section of the fresh root, a yellowish resinous liquid is observed issuing from a zone of resin cells.

A number of cases of poisoning have at various times been reported, due, no doubt, to this root having been mistaken for that of the parsnip or of sweet cicely.

For the following investigation a quantity of the roots of cicuta was collected in July and allowed to dry, and about three months afterwards a portion of the finely powdered drug was submitted to analysis with the following results:

Solvent Used.	*Substance Obtained.*		*Per Cent.*
Petroleum ether	Volatile oil	.068	
	Fat	.540	
	Wax	.376	
			.984
Stronger ether	Brown resin		1.380
Absolute alcohol	Resin		1.996
Distilled water	Mucilage	1.000	
	Dextrin	1.500	
	Glucose	3.555	
	Extractive	2.445	
			8.500
Dilute solution of sodium hydrate	Pectin	1.500	
	Extractive	1.000	
			2.500
Dilute hydrochloric acid	Pararabin		2.900
Boiling distilled water	Starch	5.500	
	Extractive	2.500	
			8.000
Chlorine water	Lignin		2.396
Nitric acid and potassium chlorate	Incrusting matter		10.264
	Cellulose		31.436
	Ash		11.608
	Moisture		9.127
	Loss		8.909
	Total		100.000

The fat obtained by petroleum ether melted at 57°C., and the wax melted at 96° C.

Tests for alkaloids and glucosides in the ethereal and alcoholic extracts failed to indicate them.

A portion of the original drug was then distilled with milk of lime; the resulting distillate gave negative indications of a volatile alkaloid. A number of other tests were then applied to the original drug for alkaloids, but with negative results.

Some of the green root freshly gathered was then obtained, and tested by extracting with acid, rendering this acidulated solution alkaline, and agitating with ether; this ethereal solution on evaporation to dryness yielded a residue, which when dissolved in acidulated water gave alkaloidal indications with a number of reagents. The green drug, however, when distilled with milk of lime did not yield any indications of a volatile alkaloid.

Some physiological experiments were made on a full-grown healthy cat.

The dried drug used in the analysis failed to produce any unnatural symptoms when administered in 5-gramme doses. The green root, however, in 2-gramme doses produced great uneasiness, followed by vomiting.

The conclusions reached by this investigation are that there is probably a non-volatile alkaloid present in cicuta, and that it is either not present in the root in July, or else it is decomposed by drying. The evidences of alkaloid were obtained from the root collected in November.—Augustus S. Blackman, Ph.G. (contribution from the chemical laboratory of the Philadelphia College of Pharmacy) in *American Journal of Pharmacy*, January, 1893.

Glykogelatin is a new salve-base made from gelatin and glycerin.

Pyrozon is a 50 per-cent. solution of hydrogen peroxide which has been recommended in skin affections.

Sodium peroxide is analogous to hydrogen peroxide in its action, and is being introduced as a bleaching agent.

Dulcine.—This is a new rival of saccharin. It is p-phenetolcarbamide, and is said to be quite as valuable as an edulcorant as saccharin.—*National Druggist*, Feb. 1, 1893.

Agopyrin.—Agopyrin, a preparation sold in Germany in tablet form, is a mixture of 0.25 gramme salicin, 0.025 gramme ammonium chloride, and 0.025 gramme cinchonine sulphate per tablet.—*Pharmaceutical Record*, Jan. 26, 1893.

Coryl.—A new anæsthetic. It is a mixture of methylic and ethylic chlorides. While methyl chloride boils at —27° C. (17½° below zero, F.) coryl remains liquid at zero, C. It has proven of great value in dental practice and minor surgery.—*National Druggist*, Feb. 1, 1893.

Resorcinol is the name given to an amorphous, coffee-brown powder made by heating together equal parts of resorcin and iodoform. It is used in a 25 per-cent. powder for sprinkling, or in a 6- to 12-per-cent. petrolatum salve. The editor of the *Pharmaceutische Centralhalle* says: "It should be observed that in America the name resorcinol is used as a synonym for resorcin."

Extract of Male Fern.—Weppen and Luders (*Apoth. Zeit.*) have ascertained that commercial extractum filicis, when of a handsome green color, often contains copper, and Tschirch has detected in the same an addition of chloroform. Comparisons with a standard article specially prepared have shown that every dark-green extract of fern is to be regarded with suspicion; it should be greenish only.—*Druggist's Circular*, February, 1893.

To Mend Broken Objects of Cast Iron.—For this purpose, the following procedure is recommended as giving very satisfactory results: Take 2 ounces of sal ammoniac, 1 ounce of sublimed sulphur, and 1 pound of cast-iron filings; mix in a mortar and keep the powder perfectly dry. When it is to be used, mix it with twenty times its weight of clean iron filings, grind the whole in a mortar, wet with water until it becomes a paste, and apply to the parts to be mended. It will become after a time as strong and hard, it is said, as any part of the metal.

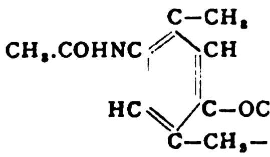
An Ocular Antiseptic.—Iodine trichloride is highly recommended by Dr. Pflueger of Bern as an antiseptic in various affections of the eye (*Ann. d'Oculistique*, September, 1892). In solutions of 1:2000 it kills within one minute the staphylococcus aureus, and in from one to five minutes various cultures from pus and malignant ulcers. For subconjunctival injections the new medicament was used in the strength of 1:1500; and as an application in different diseases of the eye, solutions containing from 0.1 to 1 per cent. were employed.—*American Journal of Pharmacy*, January, 1893.

Thiodinaphthyloxide, a New Sulphur Compound.—Thiodinaphthyloxide results when thio-β-naphthol is treated in alkaline solutions with oxidizing agents, such as potassium ferricyanide, the halogens, etc. It is an odorless, orange-colored substance, which is insoluble in water and cold sodium hydrate solution, difficultly soluble in alcohol, readily soluble (on heating) in glacial acetic acid, ether, benzol, toluol, chloroform, acetone, methyl and amyl alcohol. Max Schiller-Wechsler has applied for a patent for the method of its preparation.—*Pharm. Centrh.*, xxxiii, p. 714.

Lysol.—Attention having been drawn by the recent cholera "scare" to the popularity of carbolic acid as a disinfectant, notice is being taken in medical circles of the even superior advantages for many purposes of the cresols as disinfectants. It was discovered that crude carbolic acid, made soluble by the action of sulphuric acid, surpassed in germicidal power an equally strong solution of pure phenol; and creolin, although free from carbolic acid, was proved to be of unmistakably superior disinfecting activity to the latter. Being insoluble in water, however, these cresols were neglected until the idea was hit upon of combining them with resin soap. Although very efficacious, these preparations were only emulsions; and it remained for the cresols to be made soluble, as now in the form of lysol, in order that what can be called the ideal soluble disinfectant should be made generally available. Lysol is produced by dissolving in fat, and subsequently saponifying, with the addition of alcohol, the fraction of tar oil which boils between 190° and 200° C. It is a brown, oily-looking, clear liquid, with a feebly aromatic creasote-like odor. It contains 50 per cent. of cresols; and it is miscible with water to a clear, saponaceous, frothing fluid. It shows turbidity when mixed with hard water, but its disinfectant quality is not impaired thereby. It acts, to all intents and purposes, as a soap; and it is admirably adapted for use in surgical operations. According to German testimony, lysol is one of the most precious products of coal tar which chemistry has given to the service of mankind.—*Scientific American.*

HELENIN.—Posth has ascertained that this substance is not the anhydride of alantic acid, but has the characters of a lactone, and while it is convertible into a salt of alantic acid by warming with solution of caustic alkali, alantic acid (m.p. 94° C.) is converted into the lactone (m.p. 76°) by heating, with separation of water. The methyl ester of alantic acid yields, on heating, helenin and methylic alcohol. The amide yields helienin and ammonia. By the action of nascent hydrogen, helenin or alantolactone takes up two atoms of hydrogen, forming hydralantolactone $C_{15}H_{22}O_2$ (m.p. 123° C.), from which Posth obtained salts, esters, and the amide of hydroalantic acid $C_{15}H_{24}O_3$. — Schimmel's *Bericht* (*American Druggist*, Jan. 16, 1893).

THYMACETIN, $C_{14}H_{21}NO_2$.—This substance has been recommended by Jolly as a neuralgic (*Pharmaceutical Journal*, xxii, 692). It is prepared from thymol ethyl ether, by first converting it into the para mononitro compound, a crystalline body readily soluble in alcohol or ether. This is reduced with tin, the amido derivative acetylated, and the thymacetin distilled off *in vacuo* or purified by recrystallization. Thymacetin melts at 136° C., is readily soluble in alcohol, sparingly in ether, and almost insoluble in water. It is probably derived from thymol by the substitution of ethyl for the hydrogen of hydroxyl, and of an acetylated amido group for an atom of hydrogen in the nucleus, so that its constitution may be represented by the formula given above.—*Pharmaceutical Journal and Transactions*, Jan. 28, 1893.

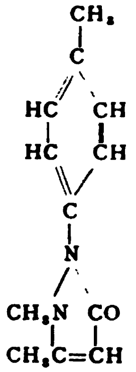


SALOPHEN AS AN ANTIRHEUMATIC.—Dr. Fröhlich reports (*Wien. Med. Wochen.*) on his experience with Salophen—previously described [see BULLETIN OF PHARMACY, 1892, p. 90]—in thirty cases of acute articular rheumatism. In none of these did the remedy fail, it is claimed; the pain ceased, as a rule, in from three to four days, while the acute swelling of the joints disappeared in from six to eight days. However, extensive effusions were not influenced, nor did the medicament guard against relapses; furthermore, in two cases acute endocarditis appeared during the treatment.

On the whole, the author considers Salophen a prompt and efficacious remedy against acute articular rheumatism, and prefers it to the salicylates for three reasons—to wit: being decomposed only in the intestines, it does not irritate the stomach; it can be given in larger doses and for a long period without occasioning untoward effects (in the author's cases, these occurred only in three instances, and then they were only slight); it is tasteless.

In chronic rheumatism Salophen was not so efficient; in six cases observed by Dr. F., only two were improved; and as an antipyretic it proved to have but very little action.—*Merck's Bulletin*, Oct. 15, 1892.

TOLYPYRIN, $C_{12}H_{14}N_2O$.—The endeavor to obtain a compound less energetic in its action than antipyrin is stated to have been attended with success by the formation of a phenyldimethylpyrazolon methylated in the para position of the phenyl group, or p-tolyldimethylpyrazolon—to which the above trivial name has been given. The constitution of this compound is represented by the annexed formula, and it is stated that it possesses valuable therapeutic properties. This preparation is made by Riedel, of Berlin, at whose manufactory several other experiments have been carried out with the same object. The p-ethoxyphenyldimethyl pyrazolon was not found to answer the purpose. — *Pharmaceutical Journal and Transactions*.



Tolysal, $C_{12}H_{14}N_2OC_7H_6O_3$, or para-tolydimethylpyrazolon salicylate, is a chemical combination of tolypyrin and salicylic acid, and occurs in colorless crystals, melting at 100 to 102° C., nearly insoluble in water, but readily soluble in alcohol. Tolysal has been thoroughly experimented with in a Berlin clinic, and we are informed that the therapeutic effects were surprisingly excellent. An early clinical report is promised in a Berlin medical journal, and we will probably receive the same report simultaneously for publication in this journal.

THE PROSPECTS FOR COAL-TAR PRODUCTS.—The indications now point to an early appreciation in the value of all the various products of coal tar—the several manufacturers abroad, where the industry is carried on, having entered into an arrangement whereby the future course of prices will be governed by a committee selected for the purpose of putting values at a point that will admit of a liberal return upon the capital invested in the industry. It is positively stated that no combination has been formed; and though this may literally be true, yet the fact that prices in the future are to be governed, and the market not permitted to be regulated according to the law of supply and demand, points to a general understanding and a decision to take harmonious action in the future conduct of affairs. Though the article coal tar is in itself an insignificant and formerly a worthless substance, yet the progress of chemistry has made wonderful strides in the development of a yield that is looked upon as marvelous. In addition to the indispensable product of carbolic acid, there are produced anilin oil and salt, benzol, acetanilid or antifebrin, antipyrin, phenacetin, and a host of synthetic derivatives that are constantly coming into use for medicinal and manufacturing purposes. Prices of anilin oil, carbolic acid, and benzol have already felt the influence of "committee" action, the latter having advanced to the point of 2*s.* 9*d.* per pound in Europe, and it is only a question of time when the other leading articles will follow in the wake. The coming summer will probably start a boom in carbolic acid, especially if the cholera epidemic again makes its appearance on the other side. Should the dreaded disease obtain a footing upon our shores, a demand would be stimulated here which would quickly absorb the available supply and necessitate heavy contracts abroad, under which circumstances prices would naturally rise to a point considerably above present reasonable values. The trade appear confident that they will be forced to face a higher market for the leading products soon, and some in anticipation are quietly placing orders with foreign makers with a view of covering to some extent the probable wants of the coming season.—*Pharmaceutical Record*, Jan. 19, 1893.

Cancroin.—This preparation is an aqueous solution of neurine, containing phenol and citric acid, which has been recommended by Adamkiewicz as a subcutaneous injection for the treatment of cancer. The remedial effects of this treatment have been in some respects encouraging. Cancroin is employed in three forms, distinguished as I, II, and III, differing in strength. The solution III is used first and injected to the extent of 0 25 c.c.; increasing the dose daily by 0.25 c.c. up to 1 c.c. The injection in this dose is continued for several days, according to the nature of the particular case. The use of the solutions I and II depends upon the effects produced; and directions are given in the work published by Adamkiewicz on this subject (*Untersuchungen über den Krebs und das Princip seiner Behandlung*). Though Adamkiewicz has not succeeded in cultivating a specific cancer parasite, in the ordinary way, he believes that the positive proof of the poisonous nature of cancerous tissues indirectly justifies the inference that parasites are concerned in causing cancer. When various tissues and the brain of an animal were inoculated with cancerous tissue, the animal operated upon invariably died when the cancerous material was implanted in the brain. But inoculation of the abdominal skin only produced inflammation and secretion of pus. The cancer poison is soluble in water, and the effects of inflammation do not appear to be determined by ordinary bacteria, but the poisonous substance appears to act upon the nervous centre. Experiment has shown that the cancerous cells are the parasites which probably develop only in the living organism. Adamkiewicz considers that they are a species of coccidium, which he names *Coccidium sakolytus*. The poison he terms cancroin, and has ascertained that the living cancerous cell is the seat of its formation. The fact shown by Jenner and Pasteur that the products of parasites are effective prophylactics against their action, has led Adamkiewicz to the conclusion that cancroin, the toxic product of the cancer parasite, may be utilized as an alexine against cancer as a prophylactic inoculation. In seeking an adequate supply of material for the purpose, he found that the fresh germ-free tissue of a corpse exerted a remarkably similar action to the cancerous tissue, its poison being physiologically in close relation to that of cancer. As the sole active base of the fresh corpse tissue is Brieger's choline, from which neurine is produced by elimination of water, Adamkiewicz tested the action of these two bases, and found that the application of neurine to the cancerous organism caused the death of a number of cancer cells. On the basis of these observations it is inferred that neurine is identical with or in some way related to cancroin, and its application in the treatment of cancer recommended.—*Bericht*, 1892, p. 54 (*Pharmaceutical Journal and Transactions*, Jan. 28, 1893).

Hungarian Pharmacopœia.—It is ten years since the last edition of this Pharmacopœia was published, and a new one is now in preparation.

The Georgia State Board of Pharmacy will meet in Atlanta, at the Capitol, Feb. 27th, to examine candidates for druggist's and pharmacist's license. All those wishing to be examined should notify the Secretary, H. R. Slack, La Grange, Ga.

The Scheele Memorial Medal.—The medal which has been struck in aluminium by the Swedish Pharmaceutical Society, as a reminiscence of the ceremony of Dec. 9, 1892, when the statue erected to Scheele's memory was unveiled at Stockholm, is now ready for distribution, and copies may be obtained of the Secretary, Mr. Bremridge, 16 Bloomsbury square, London, at a cost of four shillings each.—*Pharmaceutical Journal and Transactions*, Jan. 7, 1893.

Formal Opening of the New Home of the Philadelphia College of Pharmacy.—The formal opening of this perfectly equipped institution for teaching the art and science of pharmacy was celebrated Wednesday evening, Feb. 22d. This famous school was established in 1821, nearly three-quarters of a century ago. With its cosmopolitan location and its long experience, it must commend itself to all those aspiring to acquire a complete knowledge of modern pharmacy.

The Editor of the Bulletin desires to acknowledge the artistic and chaste invitation received, and to wish its management the abundant success its enterprise so fully merits.

Abolishing Days of Grace.—The following bill to abolish days of grace has been introduced in the New York Legislature by Assemblyman Tripp, a banker, of Cortland:

Section 1. All notes, drafts, checks, acceptances, bills of exchange, bonds, or other evidence of indebtedness, whereby he, they, or it shall promise to pay to any person, corporation, or order, or the bearer, any sum of money as therein mentioned, and in which there is no express stipulation to the contrary, no grace, according to the custom of merchants, shall be allowed, but the same shall be due and payable, as therein expressed, on the day and date named, without grace.

2. All acts and parts of acts inconsistent with the provisions of this act are hereby repealed.

3. This act shall take effect and be in force on the first day of January, eighteen hundred and ninety-five.—*Oil, Paint and Drug Reporter*, Jan. 30, 1893.

COMMERCIAL TRAVELERS AT THE FAIR.—Fifteen delegates, representing seven of the largest commercial-travelers' associations in America, held a meeting at the Tremont House, Chicago, Ill., Jan. 14th, to form an organization to prepare for the entertainment of the commercial travelers at the World's Fair, next July. A. J. Dowd was elected president, and George C. Cooper Secretary.

Mr. Dowd read a letter from Director-General Davis, offering the traveling men their choice of weeks in July; and after short discussion it was voted unanimously that the week of July 24th be selected. The delegates said they would make a showing of one hundred thousand, July 26th, the day selected for the parade. —*Confectioner's Journal*, February, 1893.

RULED PRESCRIPTION BLANKS.—Cyrus Edson, M.D., President of the Board of Pharmacy of the City and County of New York, contributes an article entitled, "Accuracy in Prescriptions," which deserves the careful consideration of all prudent physicians and pharmacists. One excellent suggestion he makes is to use the following design of prescription blank:

℞	O	℥	ʒ	Grs.	Mins.

NEW YORK SOCIETY OF APOTHECARIES.—At a meeting of representative pharmacists of New York City and Brooklyn, held on the evening of Wednesday, Jan. 25th, at 415 West Twenty-fourth street, New York City, steps were taken for the organization of a society having for its objects the protection of the trade and professional interests of its members and the establishment of a social understanding among the drug clerks and proprietors of the cities of New York, Brooklyn, and Jersey City.

It was decided that the society shall consist of members, associates, and honorary members, and membership shall be open to all apothecaries having at least two years' experience in the practice of pharmacy and who are 21 years of age. Any person or persons interested in the promotion of pharmacy, or connected with the profession as manufacturers, agents, or traveling salesmen, shall be eligible to election as associate members. The initiation fee shall be $1, and the annual dues $6 to be paid in monthly installments of 50 cents each. It was, however, decided that no initiation fee shall be charged for the first three months.

A second meeting of the society was held Feb. 1st, when a constitution and by-laws were adopted, the aims and objects of the organization fully set forth, and members received from the constituent cities.—*Pharmaceutical Record*, Jan. 26, 1893.

THE NEW BUILDING FOR THE NEW YORK COLLEGE.—The plans for the building to be erected for the New York College of Pharmacy which have been finally approved provide for a fire-proof structure six stories high, 75 by 100 feet in area and 85 feet high.

The building will be constructed of buff brick with terra cotta trimmings and columns, and the basement story will be built of gray stone.

In the basement will be a lobby room for the students, a gymnasium, toilet, and the janitor's quarters.

The offices and the meeting rooms for the members, the alumni and the trustees, the library, and the Canby Herbarium will be located on the ground floor.

Above this is a lecture room in the form of an amphitheatre, accommodating 400 students, and joining this are the rooms of the professors and instructors.

Over the lecture room will be a pharmacognosy room accommodating 100 students of the microscope at one time, a quiz room, professor's room, and stock room.

The fifth floor will be devoted to the pharmaceutical laboratory, accommodating 150 students, with scale rooms, stock room, and the professors' room.

The top floor will be arranged as a chemical laboratory with the usual stock room, etc.

The style of architecture will be very plain, and everything will be subordinated to the practical purposes for which the building is intended.—*American Druggist*, Jan. 16, 1893.

ANNUAL MEETING OF THE DRUG SECTION OF THE BOARD OF TRADE AND TRANSPORTATION, NEW YORK.—The meeting was largely attended. A luncheon was served at the Fulton Club prior to the business exercises.

Chairman Fairchild called the meeting to order and requested the report of the Committee on Tares.

The committee recommended: That all drugs, the price of which in original bales and bags is under ten cents per pound, shall be invoiced gross for net. That in case of double, extra, or unusual bagging, a suitable allowance for extra tare is to be allowed by seller. That on all goods in matting, actual tare is to be allowed.

The committee define *actual tare* to be the real tare, the tare of each package being actually ascertained to the satisfaction of buyer and seller. *Average tare*, where a few (or definite number) of the packages being weighed, their mean average is regarded as the actual tare of each package. *Invoice tare*—By this is understood the tare allowed by the foreign shipper.

It was thought desirable to lay over discussion till next meeting, and the trade were solicited to send in to the Committee on Tares—J. H. Stallman, Jos. A. Velsor, Andrew B. Rogers, Jr., Geo. R. Hillier, James Hartford—suggestions, corrections, and additions.

The following ticket for officers was unaminously elected: For Chairman, Andrew B. Rogers, Jr.; Vice-Chairman, Thos. F. Main; Secretary, Dr. W. J. Schieffelin; Treasurer, W. D. Faris; Executive Committee, W. H. Wickham, C. E. Tyler, and John Clay, with the chairman and vice-chairman *ex-officio*. S. W. Fairchild was nominated and unanimously elected a trustee to represent the Drug Section's interests in the general and special meetings of the Board of Trade and Transportation.

The most exciting discussion of the meeting was in reference to the effects upon the drug trade of the machinations of the Whiskey Trust, who endeavored to impose upon manufacturers of pharmaceutical and chemical products for use in medicine and the arts, and who would compel consumers to pay high prices for indispensable products.

The argument against the proposed increased in the internal-revenue tax took the form of a special motion, empowering the Committee on Legislation to present a petition to Congress demanding that no increase in the internal-revenue tax be made, and that a reduction in the import duty be authorized. The committee, before drawing up the petition, invited advice and suggestions.

WHAT DRUGGISTS CANNOT TAKE BACK.—I have never met a druggist who at some time or other has not had trouble about goods bought and returned at his place of business. It has occurred to me very often that I would scribble down a little reasoning on that score and have it printed, and, wherever opportunity offered, present it to a patron in place of relying on diplomacy—which I have not got—or on smooth talk—which is not my style.

If I sell an original package of some proprietary medicine, and a patron returns such package in good condition for some reason or other, I cheerfully return the money—or exchange for something else. But when I sell a fountain syringe, an atomizer, a water-bag, a bed-pan, a breast-pump, a clinical thermometer, the case is very different.

Undoubtedly in many cases the article is returned because it has served the purpose, and patrons unthinkingly wish to save expense by returning it. I say *unthinkingly*, because there can hardly be any reasonable being who would knowingly buy such an article of you, or any druggist, if they had the faintest idea that such an article had already been used in somebody else's sick-room. What would become of a druggist of whom the patrons knew that he offered articles for sale that had already been used?

If I take back an atomizer that has been used in a house where there is diphtheria, and sell such an atomizer—and thereby spread the epidemic—would I not be just as much guilty of criminal neglect as if I had sold morphine for quinine?

How, then, can a druggist guard against this? Simply by drawing the line on such items as above mentioned, and by refusing peremptorily to take them back after they have once left his hand. Only in this way can he vouch for his goods absolutely.

If you procure a bundle of greenbacks from a bank marked $100, the bank does not permit you to claim a shortage if you have left the bank without counting your package on the spot. So the druggist. If rubber goods of above description have been out of your control once, you cannot conscientiously assert that they have never been used before.

You owe it to your patrons to protect them, and you cannot do so unless you absolutely refuse to accept goods back after having once sold them; and I would be very much mistaken if a patron would not think more of you for taking such a determined stand.

But we are often rushed, do not always feel just like making a good argument; and, with that view, I reduced my thoughts to writing, and hope they will assist my brother druggists in a case of exchange trouble.—Wm. Bodemann in *American Druggist*.

Trade Supplement.

The BULLETIN *invites its advertisers and subscribers, and all connected with the drug trade, to send items of information, for these columns, concerning all new departures, products, and facts regarding the general and special trade interests of druggists.*

THE A. Major Cement Co. will give a thermometer worth $10.00 to any druggist for $1.50, delivered free.

⁂

A. F. THERIOT, the genial American druggist of Nuevo Laredo, Mex., has just moved into new quarters, where he smiles upon the numerous drummers who assail him from the U. S. A. All are made welcome and invited into his private office, where the extracting process is undertaken.

⁂

THE A. Major Cement Co. has just paid its first quarterly 7-per-cent. dividend on its preferred stock, and declared a dividend of 1½ per cent. on its common stock for the first quarter. This is a fine showing, considering that there is still a large amount of stock unsold. They expect to pay a higher dividend as soon as more stock is taken up.

⁂

DURING the month of December, James E. Warder of the Columbus Pharmacy, 405 West Fifty-ninth street, New York, remodeled the interior of his drug store and made it even more attractive than it was formerly, if such could be accomplished. The fittings are of antique oak, with marble finishings, and tile flooring of exquisite design. Mr. Warder is a thoroughly original and bright young man of the go-ahead type, and is doing a splendid business, which he richly merits.

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THE ATTENTION of those of our readers who are in need of filter paper is called to the fact that Whitall, Tatum & Co., the popular wholesalers, make an important specialty of this article, which they offer at "taking" prices. The manufacture of filter paper is now an American industry, although imports from abroad still continue. It would seem, however, that some occult reason must be held to account for this latter circumstance, in view of the testimony of many who have compared the quality and the cost of W., T. & Co.'s goods with the imported article, to the disadvantage of the latter. Send for a sample. The address of this enterprising firm will be found in our advertising columns.

⁂

THE mystery of the manufacture of rock candy, and the avoidance of all deteriorating elements, are matters thoroughly understood and conscientiously applied by the D. B. Scully Syrup Co., of Chicago. Pharmacists and physicians do not need to be told that, so far as medicines and the vehicles of the same are concerned, purity is the only safeguard of efficiency; yet the manufacture of sugar, being one of the arts not learned in its practical details by students of medicine or of pharmacy, must be confided to specialists. Few people are aware of the many possibilities of adulteration and impurity attending the various steps of saccharine development, from the crude cane or cereal to the highest point of perfection—rock candy. It is the pride of the Scully Syrup Co. to make only the best. Their place of business is 49 and 51 River street, Chicago.

⁂

IN SPEAKING of the treatment of pneumonia by quinine and Antikamnia, Prof. Palmer says: "The effects desired, and certainly, as a rule, produced, are a decided reduction of the temperature, a marked diminution in the frequency of the pulse, a decided moisture of the skin, or free sweating, a slower and more easy respiration, or relief from pain and the feeling of fullness in the chest, a diminution of the cough and of the tenacious and bloody character of the expectoration; and, in short, not only is there a checking of the fever, but of all evidence—general and local—of the pulmonary engorgement and inflammation." Among desirable formulæ are the following:

For cough:

℞	Antikamnia	ʒ j.
	Salol Quin. sulph. } āā	grs. xx.
	Spts. frumenti	℥ iij.
	Syr. tolutan....................	℥ j.
	Syr. simplex...............q. s.	℥ vj.

M. Sig.: One teaspoonful every hour until cough is relieved.

To relieve the pain and burning in both acute and chronic cystitis:

℞ Antikamnia and Salol tablets, āā.. grs. v.

Num. 24. Sig.: One every three hours.

⁂

THE following compressed tablets have been added to the list of Parke, Davis & Co's therapeutic specialties: Acetanilid comp. (Migraine); Alum comp. (for injection); Anodyne; Anti-constipation; Aphrodisiac; Pepsin and Bismuth (℞ "B"); Cascarin comp.; Chloral hydrate comp. (anti-spasmodic); Chlorodyne; Cocaine and Cubeb comp.; Cubeb comp. (gonorrhœa); Cystitis; Damiana comp; Diarrhœa tablets (Board of Health); Digestive tablets (℞ "B"); Emmenagogue; Ergotin comp.; Four Chlorides (Univ. Hosp. Pharm.); Hypophosphites and Quinine comp. (without strychnine); Hypophosphites and Quinine comp. (with strychnine); Hypophosphites and Quinine comp. (with creasote); Krameria; Lacto-ferric; Neuralgic (Brown-Séquard); Salicin, 5 grains; Salol, 2 grains; Salol, 5 grains; Sodium bromide, 5 grains; Sodium bromide, 10 grains; Syphilitic (℞ "A"); Syphilitic (℞ "B") Tonic, vegetable; Trifolium comp. (alterative); Triple Bromides; Viburnum comp. (uterine tonic); Zinc sulphocarbolate, 2 grains; Zinc sulphocarbolate, 5 grains.

Also tablet triturates as follows: Bismuth comp.; Calomel and Sodium bicarb. comp. (℞ "B"); Cathartic, active; Diarrhœa; Dyspeptic (Dr. E. B. Haworth); Fever (Dr. T. G. Davis); Hydrastin comp.; Mercury protoiodide and Opium; Mercury protoiodide, $\frac{1}{1000}$ grain; Mercury protoiodide, $\frac{1}{500}$ grain; Mercury protoiodide, $\frac{1}{100}$ grain; Nerve Tonic, No. 1 (Dr. Westbrook); Nerve Tonic, No. 5; Nitroglycerin comp. (℞ "C"); Nitroglycerin comp. (℞ "B"); Nux Vomica and Pepsin (Dr. Skiff); Pepsin and Pancreatin; Physostigmine sulph., $\frac{1}{50}$ grain; Picrotoxin and Belladonna; Rhinitis (½ strength, Dr. Lincoln); Tonsillitis.

Also fluid extract Passion Flower.

Also a Diurnal Tablet Triturate case of eight vials, each vial containing 100 tablets of the following formulas: Aconitine crystals; Arsenious Acid; Cocaine hydrochlorate; Corrosive Sublimate; Digitalin, pure; Morphine sulphate; Strychnine nitrate; Podophyllin.

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COLORADO.

Since the holidays are past, people have more time to be sick, and the retail business is very much recovered from the reaction following the festive season.

W. A. Hover & Co., Denver, report an improving city trade, and the largest country trade for January since their advent in the wholesale business, some years ago. May their success continue!

Much regret and surprise is expressed at the failure of Wm. Dingle, for many years a prominent druggist of Denver. For some time past Mr. Dingle has been located at the corner of Seventeenth and Curtis streets. Seventeenth street appears to be an unfortunate street for druggists.

Miller Bros. (owners of "The Pharmacist" gold mine) have recently sold their store at Colorado Springs to Tamm & Arcularius, formerly druggists at Leadville. While "The Pharmacist" continues to pay at its present rate, it is not likely that the popular Miller Bros. will want to go into the drug business again under the most promising circumstances.

It is also reported that Tamm & Arcularius, one of the above-mentioned firms, have sold out their store at Leadville and will devote their entire time to business in their new location. These young men had the leading prescription store at Leadville, which they built up through their thrift, courteous ways, and business ability, and all their old friends wish them the success in their new enterprise which every one who knows them feels assured will result.

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FLORIDA AND GEORGIA.

L. P. Lawrence, Orlando, Fla., is the leading druggist of that enterprising city.

Tampa Drug Co. is the name of a new firm in Tampa, Fla., being the successor to Benjamin & Co.

J. Yeorger, of Brunswick, Ga., is one of the veterans in the drug department there, and a very popular man too.

Dr. Palmer, of Palmer Bros., Fernandina, Fla., recently while on a visit to a patient had the luck to kill two fine deer on Dungeness Island.

W. G. Aldridge, of Sanford, Fla., recently purchased the store of Wm. Guild, of that city, and is now a valuable acquisition to the Florida membership.

Hayden & Kirk is the firm name of a new store recently opened at Jacksonville, Fla. Mr. Kirk was for a long time connected with Geo. Hughes, and is a most excellent gentleman.

Sidney B. Leonardi, of Tampa, Fla., still leads the van as the banner druggist of Florida. He has a good stock, polite clerks, a young lady as book-keeper, and his store is as neat as the proverbial pin.

George Smith, of Brunswick, Ga., is known in South Georgia as the best manager of a drug store in this section. When it comes to skill and precision, George Smith "is right there." His firm showed their appreciation of his services by giving him on Christmas day a check for $150.

Key West, Fla.:

Dr. A. L. Pendleton, a popular druggist, was married a few months ago to a Philadelphia lady.

Dr. J. R. DeArmona, besides having an extensive practice, at the same time does probably the largest drug business on the Island.

Mr. Thornton, formerly a prominent druggist of Sheffield, Ala., is now with Dr. J. W. O. R. Plummer, and is rapidly making friends in his new quarters.

Maximus M. Diaz, one of the leading druggists here, has his store literally filled with drugs from top to bottom, and Parke, Davis & Co. are well represented.

S. P. Watson, probably the man who gets the largest businsss in the drug and drug-sundry line of any man who comes south, recently made Key West a visit and captured his usual number of heavy orders.

B. F. Ridgwell is the politician of the drug fraternity of Key West. He is certainly well posted on national questions, and is as expert with the pill and tile as he is convincing in his arguments about the benefits of the McKinley bill.

Jerry J. Warren recently fitted up an elegant new store, and is now most "becomingly fixed." Than Jerry Warren no more popular man is in Key West, and he is as good at other things as he is in managing a pharmacy. Izaak Walton would be a disciple of his if he were now living.

Mr. Tyler, the handsome clerk of Jerry Warren, recently returned from Cuba. The style of architecture over there pleased him so much that he had a house constructed in Havana and sent to him here, and he is now the envy of all the swarthy descendants of Castile with his purchase, and his quarters are the rendezvous of the *élite*.

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ILLINOIS.

"The Nelson Pharmacy" is the name given to a new drug store recently opened in Rockford. The store is located in the new Nelson Hotel, and fitted out in fine style. J. B. Lane is proprietor, and W. A. Robinson, one of the most popular druggists in the city, is in charge of the prescription department. They purpose to run an "open-all-night" pharmacy. This is the first of the kind in Rockford.

"Hartz & Ullemeyer" is the style of a dew drug firm in Rock Island. Mr. Hartz is a brother to Hartz, of Hartz & Bahnsen, the wholesale druggists. Both members of the new firm were in the employ to Hartz & Bahnsen up to the time of that firm's moving into new quarters and going out of the retail business. The boys occupy the old stand, which is one of the best in the city. They will fit it up in first-class shape, and run it the same way.

Feb. 1st the wholesale drug firm of Hartz & Bahnsen, Rock Island, was formed into a stock company, under the style of The Hartz & Bahnsen Co. Messrs. H. & B. have recently moved into new quarters. Their largely increasing trade demanded more room, and they found it necessary to build. In doing this they have spared nothing to make it complete in every detail for a well equipped wholesale drug house. The success of this firm has been phenomenal. Commencing only a few years ago, under difficulties and with small capital, they have grown until to-day they occupy a place in the front ranks, among the leading wholesale houses. In addition to their drug stock, they also make a specialty of drug sundries and fine cigars, of both of which they carry a large assortment. With their present facilities for handling goods, they are in better shape than ever before to supply the demands that come to them, and they expect to very largely increase their business.

Quincy:

Montgomery & Parker are getting ready to capture their full share of the spring paint trade.

Chas. Carley, of the fancy-goods department of Sommer Lynds, is selling goods on the road.

W. H. Heidbreder, of Sommer Lynds, is one of the most genial stock-men you will find in a long walk.

Jerome O. Christie. Jo—as the boys call him—and his eldest son Ed, make a team. They can do more business in less time, and stay in a better humor about it, than any other two people in Illinois outside of Chicago.

⁂

MINNESOTA.

B. A. Kohler, of Shakopee, is spending the winter in California.

T. Arthur Olsen has accepted a position as manager of Dr. H. K. Nissen's dispensary at Albert Lea.

Chr. Jelstrup, recently from Bergen, Norway, has accepted a position in C. F. Towne's pharmacy at Albert Lea.

Stratton Bros., of Belle Plaine, are bound to shine from now on, if paint, paper, decoration, and a general overhauling of the stock will do it.

T. W. Blasing, Henderson's popular druggist and musician, has decided to escape the zephyrs of the banana belt of Minnesota, and will sojourn in the neighborhood of New Orleans for a few weeks.

Geo. Schoell & Son have succeeded Dr. G. R. Maloney, of Belle Plaine. Mr. Schoell, Jr., who will have charge of the entire business management of the new firm, is recently from the pharmacy of Mr. Becker, of St. Paul.

W. J. Sanborn, one of Mankato's old-time druggists, is again contemplating entering the ranks of pharmacy, and has an eye open for some good stand. Drop him a line at Morristown, Minn., if you know of a good opening.

The Briggs Drug Co., of Albert Lea, opened for business on Dec. 1, 1892, at the corner of Clark street and Broadway. The members of the firm are C. A. Briggs, formerly of Briggs & Towne, of the same city, and G. H. Briggs of Delevan, Wis.

F. M. Andrews, West Concord's pioneer druggist, has sold his drug stock and building to Messrs. Clifford & McCarthy. His pleasant home in the village has also been disposed of. Mr. Andrews will no doubt take a trip to the Pacific Coast and obtain a much needed rest.

With this issue we mention with sorrow the death of Henry Tollofson, of the firm of Nelson & Tollofson Bros., prominent druggists of Kasson. Mr. Tollofson was a young man of ability, and one of the best posted pharmacists in this section of the State. A large number of friends and relatives will mourn their loss.

The meeting of the Minnesota State Pharmaceutical Association, as per recent arrangements, will be held at Lake Minnetonka, June 13th and 14th. For full particulars address either L. Mussetter, chairman, St. Paul; E. F. Allen, Minneapolis; S. W. Melendy, Minneapolis; Wm. Gansewitz, Owatonna; Elmer Jackson, Northfield; Geo. Mitsch or F. W. Faber, St. Paul.

"F. H. Juergens, successor to F. W. Juergens & Sons," is the way the new sign will read over the door of Jordan's old reliable pharmacy. Herman has rearranged and brightened up the store in many ways. The postoffice, which has occupied a part of one side for so long, has moved one door west, thus giving him a better chance for the display of his full line of fancy and toilet articles. Success will surely be with him in his venture of holding the lines entirely in his own hands.

Clifford & McCarthy have succeeded F. M. Andrews in the drug business at West Concord. Dr. Clifford is an old resident of West Concord and vicinity, and his many friends will wish him success in his new venture. Mr. McCarthy has many friends and acquaintances in and about the city, but is a new comer in the ranks of Minnesota's druggists. He handles a bottle of hæmatic syrup hypophosphites, however, like an old-timer, and it won't be long before he will be up with some of the older ones. May their door-latch be made to click often by their friends and customers!

Joseph Kehrer, of Jordan, says he is willing to furnish a good warm fire these thirty-below days, but when it comes to having a fire across the street that cracks the glass in your store-front, melts out a post from under your awning, and spoils all the sleighing for a block around, why, "Do you see that little grip up there? Well, that's got my Sunday vest in it, and if it gets as hot as that again I'm going." Mat. Deutch, his assistant, says it was pretty hot, but he will stay until the gelatin on the quinine pills melts off. Seriously, though, Mr. Kehrer's pharmacy had a close call, and we hope he will not experience as close a one again.

If you want to see what the new neatly-labeled tin herb-cans will do towards brightening up a drug store and keeping the stock away from mice, flies, bugs, spiders, worms, etc., drop into any of the following popular pharmacies in Southern Minnesota: Kelly & Tripp, Northfield; Scofield Bros., Cannon Falls; Brobeck & Roe, Kenyon; J. R. Springsted, Dodge Center; Stoddard & Wood, Stewartville; James Harmer, Pine Island; W. H. Hazle & Co., Austin; A. L. Sleeper & Sons, Brownsdale; D. L. Stiles, Dexter; G. D. Pearce, Dexter; E. Reierson, Spring Grove; R. H. Sturgeon, Canton; E. C. Hellickson, Mabel; James Emerson, Alden; N. C. Nelson, Wells. You will find them all enthusiastic over them, saying they wouldn't be without them for twice the cost. They are so cheap too. Ask your jobber's agent about them.

⁂

MISSOURI.

Kansas City:

Charley Hood, of Roy & Hood, 1030 Union avenue, is on the sick list.

Nickells & McKay have opened a neat little pharmacy at Independence avenue and Walnut street, opposite the St. James Hotel.

Emmit Francisco, head clerk for R. E. Castelaw, Eighteenth street and Troost avenue, spent several days in Rich Hill, Mo., visiting relatives and friends.

H. Y. Riddle is out again and attending to business. It will be remembered that he was severely burned about the face Christmas night while playing Santa Claus.

F. W. Studley, who has been in the employ of Messrs. Parke, Davis & Co. for some time, in charge of the city order department, left on the 10th ult. for Santa Fé, New Mexico, where he will take charge of a new store soon to be opened there.

Jas. L. Otterman, proprietor of the pharmacy at 88 James street, is so well pleased with the drug business in Kansas City that he intends starting a store at Ninth and Mulberry streets in the near future. His son, Beecher, Ph.G., will be in charge.

R. J. Holmes' pharmacy, Ninth and Prospect streets, was almost completely destroyed by fire a few nights ago. The cause is supposed to have been from a cigar stump being thrown among some towels behind the prescription case. Mr. Heald, who had charge of the store, will occupy a position at the Eleventh-and-Walnut-street store of Mr. Holmes until the insurance, etc., is adjusted.

C. L. V. Hedrick, Springfield avenue and Holmes street, has sold a half-interest in his thrifty pharmacy to E. C. Mason, who has been head clerk for a number of years. Both being thoroughly competent pharmacists and enjoying the confidence of the surrounding neighborhood, we bespeak for the Hedrick Pharmacy—under which name it will be known in the future—greater success than ever before.

Jas. M. Love has sold his Main-street store to T. O. Robertson, and will in future give his entire attention to his Tenth-and-Walnut-street store, which, by the way, is one of the neatest and most complete pharmacies in the city. T. O. Robertson has lived in Kansas City for a number of years, is well acquainted throughout the city, and will no doubt succeed in rebuilding the business that this store enjoyed during the days of the boom.

NEW HAMPSHIRE.

C. F. Southard is to open a pharmacy soon at North Haverhill.

Buxton & Johnson recently opened a new store at Goffstown. Mr. Buxton was formerly a clerk with C. H. Martin & Co., Concord.

W. M. Woodward, Franklin, will remodel his store in the spring, and intends to make it one of the neatest modern pharmacies in the State.

Messrs. Martin & Brown bought (Jan. 1st) the interest of their partner, Mr. Crowell, in the business of C. H. Martin & Co., Concord. Same business at the old stand; firm name remains as before.

Messrs. Baker & Knowlton will open a store on Pleasant street, Concord, April 1st. Both are well known and competent young men, popular with the people of Concord, and will no doubt succeed in establishing, as is their intent, a fine family trade. Mr. Baker has been with C. H. Martin & Co. for several years, as has Mr. Knowlton with Underhill & Kittredge.

N. Perly Fitch, Concord, has been forced by the increase in his business to extend his plant. He has taken the store next north, cut a doorway in the wall separating the two, put 500 feet of 20-inch shelving into the new part, stocked it with pharmaceuticals, chemicals, and "patent" medicines, and still does not seem to have room enough. Mr. Fitch is reaping now a harvest from seed planted and cared for years ago. The reward of hard work and honest effort.

"Cut Prices" is the sign conspicuous before the drug stores in Nashua, and by this sign we know a "patent" medicine cut-rate war is raging, and many ludicrous incidents grow out of the attempt of one of the cutters to buy goods of another when the marks go below cost. Little girls and boys fairly revel in soda-water and candy earned by acting as purchasing agents for some wily "cutter." Still the battle rages, and when the smoke rolls away *all* will be found injured or possibly "killed."

⁂

NEW YORK.

Brooklyn:

The general drug business was somewhat "off" last month, as compared with January of the previous year. In fact, the entire winter has, as a rule, not been wholly satisfactory.

Horsley Barker has sold his store, corner of Fulton and Adelphi streets, to Mr. Hancock. The latter gentleman will conduct the store on the same basis as promulgated by Mr. Barker.

L Carl Trites has been struggling for the past six weeks with a bad case of typhoid fever, but lots of pluck and good care brought him through so that he is ready for business again. Mr. Trites recently purchased the store of Mr. Peduzzi, 670 Fulton street.

A. J. Lynch recently sold his store, corner of Tompkins and Pulaski streets, to J. Millston & Co., and has purchased the store at the corner of Tompkins and Fulton streets, formerly owned by Blanding & Co. The store has been thoroughly renovated and is now in first-class order. We expect more business will be done than ever before, judging from the energy and skill exhibited by Mr. Lynch and his able assistants.

⁂

NORTH CAROLINA.

Messrs. Ward & Watkins, of Greensboro, recently bought out Tate Bros. of that city. We wish them much success.

Messrs. Heinitsh & Reagan, of Ashville, have one of the prettiest stores in the State, and are doing a good business.

C. E. Holton, of Greensboro, does a large retail business, and is one of the most successful pharmacists in the State.

Frank Heart, the popular clerk of R. Blackwell & Son, of Durham, has moved to Raleigh, his old home, and is now clerking for J. E. Morgan.

B. S. Davis, the efficient and popular prescription clerk of R. H. Jordan & Co., of Charlotte, was recently married to Miss Florence Withers, of that city. We wish them much happiness.

⁂

OHIO.

Cleveland:

John Fuhmeyer succeeds J. W. Deutsch & Co., at 2728 Broadway.

Benfield's Hough-avenue store was damaged about $25 worth by fire on Feb. 2d.

C. B. Wood, formerly with Strong, Cobb & Co., is manager of the People's Pharmacy, 693 Cedar avenue.

Cope's Pharmacy, 1206 Euclid avenue, has just been refitted with sectional fittings, which makes it one of the finest rooms in the city.

John A. Barker, who has been for the past eight years in charge of Benton, Myers & Co.'s laboratory, recently resigned his position.

Archie Fowler, one of Benton, Myers & Co.'s popular salesmen, has been on the sick list, but we are pleased to see he is able to resume his work.

F. A. Brooks & Co. have opened a new store at 1135 Detroit street, West Cleveland. Mr. Brooks was formerly with D. C. Lindsey, of Detroit street, and his many friends wish him success.

Henry Miller has purchased the interest of James Forest in the Gem Pharmacy, and will remove the stock to the new room, corner of Erie and Superior streets, as soon as the building is completed. Mr. Miller intends to have one of the finest rooms in the city.

⁂

PENNSYLVANIA.

The many friends of John Weaver, of the firm of Weaver & Solliday, Easton, Pa., will be glad to learn that he is able to attend to business again, after a long attack of acute rheumatism.

Chas. X. Kelchner, of Kelchner & Niekum, Bethlehem, Pa., has retired from the firm, and will engage in farming at La Grande, Oregon. E. George Niekum, his partner, will continue the business in the elegant store on Main street.

SOUTH CAROLINA.

Messrs. Henry & McCoy recently opened a new store at Chester, and we wish them success.

H. A. Ligon, of Spartanburg, is one of the cleverest and most energetic pharmacists in the State, and is doing a nice business.

Dr. D. A. Heinitsh, of Columbia, recently opened a new store in that city—one of the handsomest—and has a good run of custom.

⁂

TEXAS.

The old stand of J. T. Rother, at Corsicana, has been purchased by the Castlis Pharmacy.

The Fort Worth Drug Co. has just sold out its entire establishment to H. W. Williams & Co.

Ed. Sisk, of the Malinche Drug Co., Laredo, left on Feb. 3d for an extended sales trip through Mexico.

The announcement of the engagement of Richard Schweickhard, of Dallas, to a Señorita of the City of Mexico, has just been received.

J. R. Collons, and Furlow & West, the druggists of Groveton, were burned out in the course of a disastrous conflagation that recently visited that city.

E. H. Cooper, of Eagle Pass, expects shortly to start for Mexico on a business trip. He is a worker, and will be sure to keep his clerks busy filling his orders.

Geo. W. Morrell's business at Bryan has assumed such proportions that he is compelled to add another story to his building; he will also remodel the store, which when finished will be the pride of the city.

Houston:

W. D. Hume is improving his store by making additions, so as to increase his stock to meet the demands of his trade.

Geo. D. Gaines, late of the wholesale firm of Conklin, George & Gaines, has just opened a very beautiful drug store. His many friends wish him prosperity in his new venture.

J. Burgheim, President of the Texas State Pharmaceutical Association, is out with a circular letter to the druggists of the State urging them to send in their applications. The President is an untiring worker, and deserves the thanks of the Association for his efforts. He invites every honorable druggist, employer or employé, to join the Association, the aims of which are stated as follows:

First. To maintain a union of brotherhood among the druggists of Texas.

Second. To secure to the druggists of our State the high professional and business standing to which they are entitled.

Third. To enrich our knowledge by a free and thorough discussion, during our annual conventions, of the experiments, discoveries, and inventions made during the year past in all branches pertaining to pharmacy.

Fourth. To advise the best means and ways for the improvement and promotion of the druggist's business; and,

Fifth. To rid our State from quacks and imposters, who, plying their nefarious trade under the name of druggist, are a great injury to our business, a disgrace to our profession, and a curse to their community.

⁂

VERMONT.

It is rumored that there will be a new drug store in Burlington in April.

Herbert Webster, formerly of Gibson & Webster, Enosburg Falls, has bought the business of E. C. Frazier, East Burke.

J. M. Taylor has opened a drug store at Bradford. Mr. Taylor has heretofore been met at Lyndonville (Taylor & Wadleigh).

Messrs. Boynton & Calderwood, St. Johnsbury, will in a few days occupy their new store, which has been fitted up in the best modern style with rare good taste. Well earned success!

Irving W. Smith, formerly of the firm of Smith & Walker, St. Johnsbury, is "on the road" representing Messrs. Gilman Bros., Boston, and is meeting with such success as seldom comes to "new men."

"Charlie" Colburn, the genial "commercial tourist" in the interests of the Burlington Drug Co., starts in on a new year with the same cheery countenance and "hustle" that he displayed twenty years ago. Like Tennyson's brook, "Charlie" can say, "Men may come and men may go, but I go on forever."

J. H. Miller, known as the representative of the Burlington Drug Co. for a number of years, is now covering his old territory for John A. Robinson & Co., the Troy (N. Y.) wholesale druggists. John received numerous compliments (orders) on his initial trip. Best wishes for success from a host of friends follow him to his new position.

⁂

VIRGINIA.

The Owens-Minor Drug Co., of Richmond, are doing the largest business in the history of the firm.

B. W. Wells, of Lynchburg, is a clever gentleman, and is doing a nice retail business. Success to him!

Dr. H. W. Cole, of Danville, carries a large stock of the very best drugs he can get, and does the largest business done in the city.

Messrs. Chas. Lyle & Co., of Roanoke, do one of the largest retail businesses of any store in the State. Mr. Lyle is an A1 pharmacist and a hustler.

J. C. McFall, of Danville, recently moved into his new store under the Hotel Burton—and, by the way, it is one of the handsomest stores in the State. Much success to him!

Messrs. E. P. Reeves & Co., of Richmond, are doing a large retail business. They are *very careful* about supplying the very best preparations they can get on physicians' prescriptions, regardless of cost.

Dr. Aug. Vogl

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INDEX OF CONTENTS.

Editorial. PAGE

August Emil Vogl 97
Emil Du Bois-Raymond 99
Some of the Achievements of Chemistry 99

Original Articles.

PRACTICAL PHARMACY.

Economic Percolation. By Harry Vin Arny 100
The Collapse of Fountain Linings. By Thomas Warwick 103
Hash. By an Old Bachelor 106
Therapeutic Notes of Interest to Pharmacists. By Dr. H. M. Whelpley, Ph.G 107
Note on Acid Sublimate Dressing. By Adolph Levy 109
A Pill Excipient for General Use. By N. A. Upham 109

CHEMISTRY.

Sulpho-Salicylic Acid as a Urine Albumin Test. By Geo. F. McGuire. 109

BOTANY AND MATERIA MEDICA.

Notes on Some Tonic Barks. By P. L. Simmonds, F.L.S 110
The Clove Industry of Zanzibar 115
Insoluble Tabloids 116
Nut Cracking 117

Correspondence.

Paris Letter 119
London Letter 120
Berlin Letter 121
New York Letter 123
Chicago News—The Cut-Rate War Still On 124
Cocillana 125
Imports of Drugs, etc., at the Port of New York, for the Month of February, 1893 126
Facetiæ 127
Abstracts and Translations 128
Pharmaceutical Progress 134
Notes and News 139
Trade Supplement 141

AUGUST EMIL VOGL.

August Emil Vogl was born August 3, 1833, in Weisskirchen, Mäkren, his father being an apothecary in that place. At the age of thirteen August became a student at the high-school in Olmüz and Kremsier, which he continued to attend until 1854, after which he studied medicine at the medico-chirurgical Josefs-Academy in Vienna. In 1859 he attended as provisory chief surgeon during the Italian campaign, and graduated in 1860 with the title of Doctor of Medical Sciences, at the same time being commissioned a chief surgeon and appointed Assistant in Natural History at the Josefs-Academy.

In 1864 he qualified as Privat-docent of Pharmacognosy at the University in Vienna; served in 1866 in the capacity of regimental surgeon in various military hospitals; and from 1867 to 1869 acted as Librarian and Assistant Professor of Chemistry (under F. C. Schneider) in the Josefs-Academy. In the spring of 1870 he was appointed Professor in Extraordinary of Botany and Zoology at the German Polytechnicum in Prague, where in 1873 he became Professor in Ordinary. Early in 1874 he received his appointment as Professor in Ordinary of Pharmacology and Pharmacognosy at the Vienna University.

Since 1878 Vogl has been a member and one of the Vice-Presidents of the Superior Council of Hygiene; in 1885 he was elected corresponding member of the Imperial Academy of Sciences, and became a knight of the order of the Iron Crown; since 1888 he is K. K. court counselor, and in 1887–1888 he was Rector Magnificus of the University of Vienna, besides being elected Dean of the Medical Faculty for the years 1876–7, 1881–2, 1882–3, 1884–5, and 1889–90.

Literary Contributions.—(*a*) Separate publications: Cinchona Barks on the Vienna Market and in Vienna

Collections (German); Vienna, 1867. Vegetable Food Products, Stimulants, Narcotics, etc. (G.); Vienna, 1872.* The Most Frequent Adulterations and Alterations of Flour; Vienna, 1880. Text-book on Pharmacology (jointly with W. Bernatzek); Vienna, 1886; second edition, 1891.† Commentaries on the Austrian Pharmacopœia (jointly with F. C. von Schneider); second edition, Vienna, 1869; third, 1880. Commentaries on the Seventh Edition of the Austrian Pharmacopœia (jointly with F. C. v. Schneider); Vienna, 1890–92; also Vol. II separately under the title "Pharmacognosy." Anatomical Atlas for Pharmacognosy; Vienna, 1887.

(*b*) Papers in various periodicals, and in Transactions of the Academie der Wissenschaften and other scientific associations:

In the *Zeitschrift des Allgemeinen Oesterreichischen Apotheker-vereins:* (1864) Scammonium, Tragacanth. (1865) Semen Tonca, Ammoniacum Histological Studies on the Structure and Chemical Composition of the Soapworts (radices saponariæ). (1866) Foliæ Cocæ. Lectures on Microscopical Methods, especially regarding the Pharmacognosy of the Vegetable Kingdom. (1867) Chinological Contributions. Pharmacognosy of Ipecacuanha. (1868) Pharmacognostical contributions: (1) Bush-tea; (2) Venezuelan Cupido-Bark, *Cortex Winteranus verus;* (3) Senson Bark (Laurineæ); (4) Musenna Bark; (5) Alcornoco Bark (Venezuelan *Cortex adstringens*). [A spurious cinchona bark.] (1870) Sarsaparilla-Diagnosis. (1871) Contribution to the Pharmacognosy of some Less Familiar Barks (Casuarina, Maclura tinctoria, Agathophyllum, Nectandra, Ochrosia, Plumiera, Imbricaria, Lucuna, Monesia, Symplocos, Weinmannia, Guatteria, Lukea, Sapium, Cedrela, Schmiedelia, Ilex, Schinus, Galipea, Picramnia, Samadera, Terminalia, Lawsonia, Bertholletia, Psidium, Prunus, Myroxylon, Cæsalpinia, Inger-Assu). (1872) Pharmacognostical contributions: Ipecacuanha of Costa Rica; Condurango Bark. (1873) Remigia Bark.

In the *Lotos* periodical: (1871) Contribution to the Study of the Cape Jessamine (L.) (*Gardenia florida*). (1872) About Vegetable Wax. Floristic Contribution. Short communication on Some Histological and Histochemical Peculiarities of *Reseda luteola* (L.). (1873) Studies on the Structure and Microchemical Properties of the More Prominent Commercial Tinctorial Woods (campeachy, Brazil, and yellow-wood). (1875) On the Galls of Tamarisk (*Tamarix articulata*, Vahl.).

In the Transactions of the "K. K. Zoologisch-Botanische Gesellschaft" in Vienna: (1863) Contribution to the Anatomy and Histology of the Subterranean Parts of *Convolvulus arvensis.* (1865) Contribution to a more Accurate Knowledge, from a Histological Comparative Standpoint, of *Lignum Quassiæ.* (1865) Contribution to the Knowledge of the Formation of Crystalline Products in the Contents of Vegetable Cells. (1866) Metamorphosis of the Cellular Nucleus. (1869) Contributions to Vegetable Anatomy (laticiferous ducts of cinchonæ, sieve-tubes of cinchonæ; to the knowledge of crystalloids). (1876) Contributions to the Knowledge of so-called Pseudo-Cinchona Barks (reprinted from the memorial or souvenir publication of the twenty-fifth anniversary of the Association's existence; also in separate reprint).

In the *Sitzungsberichte der Kaiserlichen Academie der Wissenschaften*, Vienna: (1863) On Intercellular Substance and Laticiferous Ducts in the Common Dandelion Root (*Taraxacum officinale*). (1864) Phyto-histological contributions: (1) Kamala; (2) The Leaves of *Sarracenia purpurea* (L.). (1866) On the Occurrence of Tanning Principle and Cognate Substances in Subterranean Parts of Plants.

In Pringsheim's *Jahrbüchern für Wissenschaftliche Botanik:* (1866) Contribution to the Knowledge of Laticiferous Ducts in Plants (vol. v). (1873) On the Structure of the Ligneous Parts of *Ferreira spectabilis*, and the Formation of the so-called Angelmi-Pedra Resin.

In the *Botanische-Zeitung:* (1866) On the Granular Cell-Contents in the Root-stock and Stem of *Spiræa Ulmaria* (L.); also, On Resinous Granulations in the Bark of *Portlandia Grandiflora.* On the Laticiferous Tubes of Burdock (Lappa).

In the *Medicinischen Jahrbüchern*, a periodical publication of the K. K. Gesellschaft der Aerzte in Vienna: (1865) Contribution to the Knowledge of the Commercial Turpethroot, and its Resinous Elements (aggregation-thesis). On the Hæmostatic Properties of the Filaments of Ferns. (1866) Pharmacognostic Studies on the Bark of Pomegranate (prize essay in *Wochenblatt der Zeitschr. d. Gesellschaft d. Aerzte in Wien*).

In the *Mittheilungen des Wiener Medicinischen Doctoren-Collegiums:* (1881) On Poisonous Star-Anise (*Illicium anisatum*) (vol. vii).

In the *Pharmaceutical Journal and Transactions*, London: (1880) The Origin of the "Gum" of Quebracho Colorado.

In the *Wiener-Landwirth-Schaftlichen Zeitung:* (1868) Contribution to the Natural History of Rubia Tinctorum.

In *Vorwerk's Neues Jahrbuch der Pharmacie:* (1870) Cinchona Barks (alkaloidal determination).

Garcia de Orta and His Influence on Pharmacognosy. Inaugural discourse; Vienna, 1887.

The article on "Textile Fibres" (Gespinnstfasern) in Karmarsch and Heeren's Technological Dictionary.

Pharmaceutical Knowledge and the International Exposition, in the *Internationalen Ausstellungs-Zeitung*, Vienna, 1873.

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*Also in French, Paris.

†Also Italian adaptation of the same.

EMIL DU BOIS-REYMOND.

Apropos of the jubilee recently celebrated by Prof. Du Bois-Reymond, Prof. J. Rosenthal of the University of Erlangen contributes to a recent number of the *Berliner Klin. Wochenschrift* an interesting summary of the manifold scientific labors performed by the distinguished founder of electro-physics. After dwelling on his contributions to general physiology of the muscles and nerves, and on the great stimulus which he imparted to the scientific movement of his time through his writings and through his many eminent pupils, Prof. Rosenthal alludes to the surprising versatility of Du Dois-Reymond and his familiarity with provinces of literature and art which constitute to most scientific workers a veritable *terra neuva.*

"Whosoever has come in personal contact with Prof. Du Bois-Reymond, must know that he is anything but one-sided. Not only is he a master of physiology and general physics and an original worker in these fields, but he, moreover, pursues his studies in the other branches of natural science with indefatigable industry. Witness his popular lectures on anthropology and on the recent advances of natural science. But an individual stamp is imparted to the man by the fact that he has acquired so accurate a knowledge of the literary and historical features of the beginnings of civilization, and has been enabled to make valuable contributions to this branch of science. In his capacity as one of the four permanent secretaries of the Prussian Academy of Sciences, he, accordingly, chooses for his themes either the broader questions of natural science, or subjects selected from the intellectual life of the period which was coincident with the reanimation of the Academy under Frederick the Great. Let us add that Prof. Du Bois-Reymond is a master of literary style, and imparts to each of his discourses the charm of a finished work of art. The greater number of his occasional speeches, together with some of his earlier essays, have been collected into two volumes (1886 and 1887). The wealth of thought therein deposited, and the beauty of exposition, render these volumes a classical part of German literature.

"Scarcely any other living investigator can be compared with Du Bois-Reymond in versatility of knowledge and in the harmonious development of various intellectual powers. As with the giants of the Renaissance, erudition and artistic development are both united in him. For more than fifty years he has been a faithful servant of science, and for almost this period generations have listened to his discourses. All of his vast number of pupils, and his many friends who owe to him pleasurable hours of entertainment and stimulus, will unite in good wishes for a long continuance of his rich career. His powers are yet unweakened—his active spirit is still young. May it long so remain—to his own honor and to the profit of his disciples!"

SOME OF THE ACHIEVEMENTS OF CHEMISTRY.

A. L. Griswold, M.E., in *The Engineering Magazine* for November, 1892, pays a tribute to chemistry by indicating what remarkable results chemistry has achieved for engineering.

Long before chemistry assumed the dignity of a science the debt of engineering to chemistry had begun to accumulate.

In a period antedating all historical records, some one discovered that silicic acid, as it exists in flints and in sand, when fused with certain metallic oxids, cooled into a transparent solid. There is no reason to suppose that this chemical operation—the formation of a salicate by the union of silicic acid with an alkaline base—was really understood for thousands of years after the discovery of glass. The terms "acid" and base," in their chemical significations, are of modern application; yet who shall tell the enormous influence on the progress of the human race that the discovery of the manufacture of glass has effected? Let us say nothing of the invaluable uses of this material in all departments of experimental science, in astronomical research, in the domestic arts. The telescope of the theodolite and transit; the mirror of the heliostat and the sextant of the mariner; the tubes of the manometer, mercury-gage, mountain barometer, and thermometer; the water-gage of the steam-boiler; the lenses of lighthouses, the microscope, and so on to the end of the chapter, not overlooking insulators for telegraph wires and other electrical apparatus.

With sulphuric and nitric acids and glycerin, nitroglycerin has been produced by the art of the chemist, and this has put into the hands of the civil engineer and the military engineer a force to which the gunpowder of ancient times is a mere pigmy in comparison.

The ancient process of tanning leather is, in all its essentials, a chemical operation. The use of leather in the one article of belting has been an element in the progress of mechanical engineering important beyond all estimate. Yet scarcely, if at all, inferior in importance, as regards its effects upon the advancement of all mechanical arts, has been the discovery of the useful properties of caoutchouc combined with sulphur.

How could anyone have foreseen that a by-product of the manufacture of illuminating-gas was destined to become an enormous resource in the future of engineering, and that the formerly worthless ammoniacal liquor was to supply the most powerful artificial refrigerating agent ever known to mankind; that the highest engineering skill would be directed to the design of refrigerating machines and apparatus for dealing with it; and that, by its aid, enormous cold warehouses, in which perishable materials could be kept indefinitely, breweries cooled by ammonia, and artificial ice made by its use, would be common and familiar features of the present age?

The study of alloys, many of which are to be considered as definite chemical compounds, has been fruitful of results in the production of metals.

To the resources supplied by chemistry we owe the materials from which are derived a very large part of the electric power now used. People in speaking of electric power are wont to have in mind principally the generation of the electric current from mechanical power, by dynamos; and this transformation is, in itself, so wonderful, so extensive, and yet so new that it overshadows the countless smaller applications of electric power in which the electric current is supplied by chemical reaction in electric batteries. But solely by this means, for a long time, the current for operating telegraph instruments was furnished. By electricity derived from batteries millions of diminutive motors are driven to-day, and this original method of obtaining electric power not only continues to be in active demand, but the demand is increasing. Electricity as generated in "storage batteries," "storage cells," "secondary batteries," or "electrical accumulators," as they are variously styled, is regarded by many as likely to assume an even greater importance in the future.

The art of making bricks and tiles rests upon a purely chemical foundation, and in modern times has been greatly helped by the knowledge of the chemical constituents of clays. In this art, which supplies to engineering one of its most important materials, the means of examining the exact composition of crude materials, as well as manufactured products, has been supplied by chemistry.

The future historian, tracing the history of metal-working down through the ages, will date the beginning of the "age of steel" from the introduction of the Bessemer process; and it is certain that the Bessemer process never could have come into the world but for the chemical knowledge that preceded it.

The profound influence of chemistry, pervading all departments of industry, is not less conspicuous in the improved cements it has placed at the command of science. The introduction of Portland and other cements, which, when mixed with water, solidify into stone by the chemical reaction of their ingredients, and are at the same time strongly adherent to surfaces of natural stone, has given birth to a large and increasing industry in the paving of outdoor walks and the erection of architectural structures.

As the astronomer, gazing through the noblest telescope out into space, through measureless distance, is overwhelmed by the consciousness that space and the star-dust that fills it are absolutely illimitable, and that, though the power of the present aids to vision were multiplied by millions of millions, the same indications of infinite extent would yet appear beyond, so the chemist, standing on the last line of modern discovery, sees no boundary, no limitation of the possibility of discovery.

PRACTICAL PHARMACY.

ECONOMIC PERCOLATION.

BY HARRY VIN ARNY.

While it is an accepted fact that the process of percolation after pharmacopœial directions is accompanied by loss through the evaporation of alcohol present in the menstruum, the extent of that loss is not appreciated until careful computation of such is made. A calculation of this nature gives evidence of loss far beyond that usually supposed, and clearly indicates the necessity of such improvements in the process as will materially lessen the waste.

With this end in view, systematic investigation has been pursued, with results given below. For this investigation no claim of rigid scientific exactitude is made, it being confined to practical operations performed in a retail pharmacy with all the care possible under existing disadvantages.

The first step in the investigation was the estimation of the loss by the employment of pharmacopœial directions, obtaining the alcohol remaining in the marc by distillation, and estimating it at menstruum strength. This line of experiment, which we will designate as process No. 1, resulted as follows:

PROCESS NO. 1.

Substance.	Quantity.	Time of process (in days).	Percolate obtained (in fluidounces).	Distillate obtained (in fluidounces).	Menstruum employed (in fluidounces).	Loss (in fluidounces).
Belladonna root	6 troy oz.	3	36.5	7.5	46.000	2.0
Buchu	4 " "	3	17.625	3 25	24.0	3.125
Calisaya comp. (for elixir)	29 av. oz.	8	164.00	48.00	288.0	76.00
Cascara	20 troy oz.	8	127.00	16.5	158.0	14.5
Catechu comp. (for tincture)	6¾ av. oz.	5	32.	3.25	37.0	1.75
Cinchona comp. (for tinct.)	12 " "	2	64.	18.333	109.0	31.66
Cubeb	3 " "	2	32.	2.000	35.5	1.5
Digitalis	2½ " "	5	16.	2 00	21.0	3.0
Gentian comp. (for tincture)	8 " "	4	58 5	8.00	74.5	8.0
Horehound	8 troy oz.	5	51.0	6.25	65.5	8.25
"	8 " "	3	54.0	5.5	70.0	10.5
"	8 " "	6	48.0	9.25	64 5	7.25
Jaborandi	7½ " "	7	51.0	4.00	65.0	10.0
Red cinchona	4 " "	8	20.75	3.00	28.0	4.25
Rhubarb	4 " "	4	24.75	4.00	32.0	3.25
Sarsaparilla	8 " "	4	49.0	7.25	66.0	9.75
"	8 " "	5	50.5	7.5	70.5	12 5
" comp. (for syrup)	9 av. oz.	5	24.0	1.0	36.0	11.0
Senega	7 troy oz.	9	47.0	5.667	61.0	8.34
Valerian	8 " "	5	49.0	3.5	59.0	6.5
"	4 " "	3	24 5	3.0	30.0	2.5
"	4 " "	5	25.0	3.75	32.0	3.25
Totals			1066.125	167.50	1472.5	238.875

Average time of process, 5 days. Percentage of loss, 16.2.

By this method evaporation may occur both from the menstruum in the percolator and the percolate in the receiver, and to attempt to close either vessel sufficiently tight to prevent evaporation hinders the progress of percolation by retarding the circulation of air. To obviate *this difficulty* a modification of the volatile-liquid percolator was adopted—the apparatus (see Fig. 1) consisting of a glass percolator of the "Oldberg" pattern, for which was provided a brass cover containing two orifices, one for the ingress of menstruum, the other for the entrance of air. The former hole was tightly closed by means of a screw cap fitted with a rubber washer, while from the latter proceeded a U-shaped brass tube, to which was attached a rubber tube of sufficient length to reach down to the receiver. The cover was tightly fitted to the percolator by means of iron clamps, a rubber washer completing the fitting, while the projecting glass rim of the percolator was fortified by a wooden ring placed beneath.

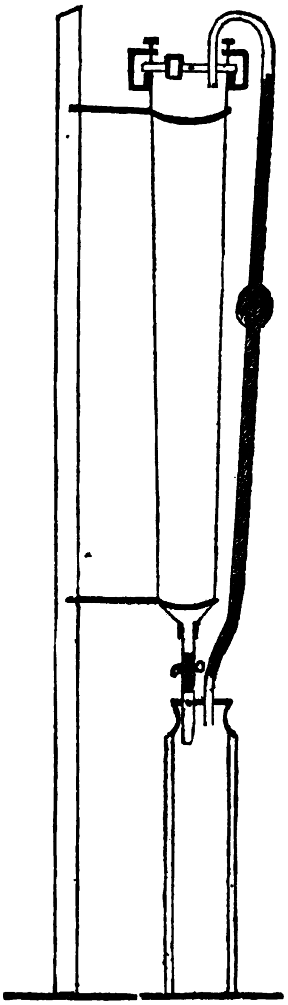

FIG. 1.—Volatile Liquid Percolator.

As a receiver a tall museum-jar was utilized. Two holes were made in its cover and were fitted with corks, through each of which passed a piece of glass tubing. Over one of these tubes was slipped the rubber tube from the brass cover mentioned before, while to the other was attached a short rubber tube, the upper end of which was fitted by means of a glass tube and cork to the neck of the percolator.

Percolation in this apparatus (which we will term Process 2, and in which, as in Process 1, the alcohol in the marc was recovered by distillation) was effected with economy, as is shown by the following table:

PROCESS NO. 2.

Substance.	Quantity.	Time of process (in days).	Percolate obtained (in fluidounces).	Distillate obtained (in fluidounces).	Menstruum employed (in fluidounces).	Loss (in fluidounces).
Belladonna root	6 troy oz.	4	43.5	7.	51.5	1.0
Buchu	4 " "	4	20.25	3.625	27.0	3.125
Calisaya comp. (for elixir)	30 av. oz.	28	160.0	33.0	190.0	3.0
Cascara	20 troy oz.	6	126.0	13.333	138.0	+1.333
Catechu comp. (for tincture)	6¾ av. oz.	8	32.5	2.375	36.0	1.125
Cinchona comp. (for tincture)	12 " "	2	64.0	10.0	85.0	11.000
Cubeb	8 " "	2	32.0	3.0	35.0	0.0
Digitalis	2½ " "	3	16.0	3.75	20.0	0.25
Gentian comp. (for tincture)	8 " "	4	59.5	8.75	68.0	+0.25
Horehound	8 troy oz.	5	56.5	7.75	70.5	6.25
"	8 " "	4	51.0	7.75	64.0	5.25
"	8 " "	6	51.0	7.75	65.0	6.25
Jaborandi	7½ " "	6	49.5	8.5	63.0	5.0
Red cinchona	4 " "	7	20.5	2.25	26.0	3.25
Rhubarb	4 " "	4	25.5	2.25	31.5	3.75
Sarsaparilla	8 " "	9	51.0	12.5	64.75	1.25
"	8 " "	7	45.75	7.5	60.00	6.75
" comp. (for syrup)	9 av. oz.	5	23.5	3.5	36.00	9.00
Senega	7 troy oz.	6	42.25	6.5	53.	4.25
Valerian	8 " "	3	47.5	5.5	56.	3.0
"	4 " "	4	23.	2.333	27.	1.667
"	4 " "	3	24.	2.75	28.	1.25
			1064.75	161.666	1301.25	—76.417 + 1.583
						74.834

Average time of process, 5.9 days. Percentage of loss, 5.7.

In two preparations mentioned in this table the process was performed with gain instead of loss, to wit: Cascara, where the percolate and distillate was 1⅓ fluidounces more than the menstruum employed, and gentian compound, where the gain was ¼ fluidounce. At first glance this condition seems impossible, but it will be readily understood when it is stated that the quantity of cascara employed contained from 4 to 5 troy ounces, and the gentian compound from 1½ to 2 troy ounces, of soluble matter.

To avoid the trouble attendant upon the distillation of the marc, an attempt was made to extract the alcohol remaining therein by pumping air, by means of an atomizer bulb connected to the detached lower end of the rubber air-tube of the apparatus used in process No. 2, into the space between the percolator cover and the marc.

Even if this process (which we will call No. 3) should have proved an economic success, it will never have found favor, because of the tedium and exertion of continued hand pressure on the bulb, and, as the following table shows a loss far greater than either process mentioned before, it merits nothing more than passing notice.

PROCESS NO. 3.

Substance.	Quantity.	Time of process (in days).	Percolate obtained (in fluidounces).	Menstruum employed (in fluidounces).	Loss (in fluidounces).
Belladonna root	6 troy oz.	5	39.	46.	7.
Buchu	4 " "	6	18.625	24.	5.875
Calisaya comp (for elixir)	29 av. oz.	19	102.	210.	48.0
Cascara	20 troy oz.	8	105.5	132.	26.5
Catechu comp. (for tincture)	6¾ av. oz.	3	32.	33.5	1.5
Cinchona comp. (for tincture)	12 " "	2	67.75	77.0	9.25
Cubeb	8 " "	2	32.	35.	3.
Digitalis	2½ " "	2	16.	18.5	2.5
Gentian comp. (for tincture)	8 " "	3	61.75	71.0	9.25
Horehound	8 troy oz.	3	46.	57.5	11.5
"	8 " "	6	46.	58.0	12.
"	8 " "	6	50.5	62.25	11.75
Jaborandi	7½ " "	5	48.5	59.5	11.0
Red cinchona	4 " "	7	18.5	24.	5.5
Rhubarb	4 " "	9	23.0	28.	5.
Sarsaparilla	8 " "	3	48.	64.	16.
"	8 " "	9	51.	64.	13.
" comp. (for syrup)	9 av. oz	6	24.	33.	9.
Senega	8 troy oz.	7	45.	54.	9.5
Valerian	8 " "	4	45.	52.	7.
"	4 " "	4	27.125	31.	3.875
"	4 " "	5	25.	31.	6.0
			1032.250	1265.75	233.500

Average time of process, 5.6 days. **Percentage of loss, 18.4.**

Another effort was made to effect the extraction of the alcohol in the marc by replacing the plain rubber tube by a syringe minus its fittings, thus producing the double effect of pressure above the marc, and rarification of air in the receiver.

This, however, proved to be a process even more tedious than No. 3; for if all parts of the apparatus are tight, the bulb, when compressed, draws in the rarified air with a slowness that taxes one's patience severely. Moreover, it is not an economic success, for in fifteen experiments the mean loss was 17.8 per cent.

The modification has proved useful in causing and maintaining a flow of percolate, and for this purpose has been retained in process No. 2.

During the employment of process No. 2, the crude apparatus, which was originally used, passed through a series of improvements, until at the conclusion of the experiments it had evolved as the compact percolator here represented. (See Fig 2.)

It consists of two portions: the narrow percolator, with brass cover, as employed in process No. 2, and the slightly wider receiver, supported on a tripod with tapering bottom terminating with a straight faucet. The two parts are fastened together by a screw-joint (Fig. 3), one portion of which is soldered to the base of the percolator, the other to the top of the receiver—the joint being tightened by means of tow. From the upper portion of the receiver emerges a tube, which is connected to the percolator cover by meaas of a syringe bulb and tubing; an additional orifice, in the same location, with screw cap, would be useful in permitting access of air when the percolate is drawn off.

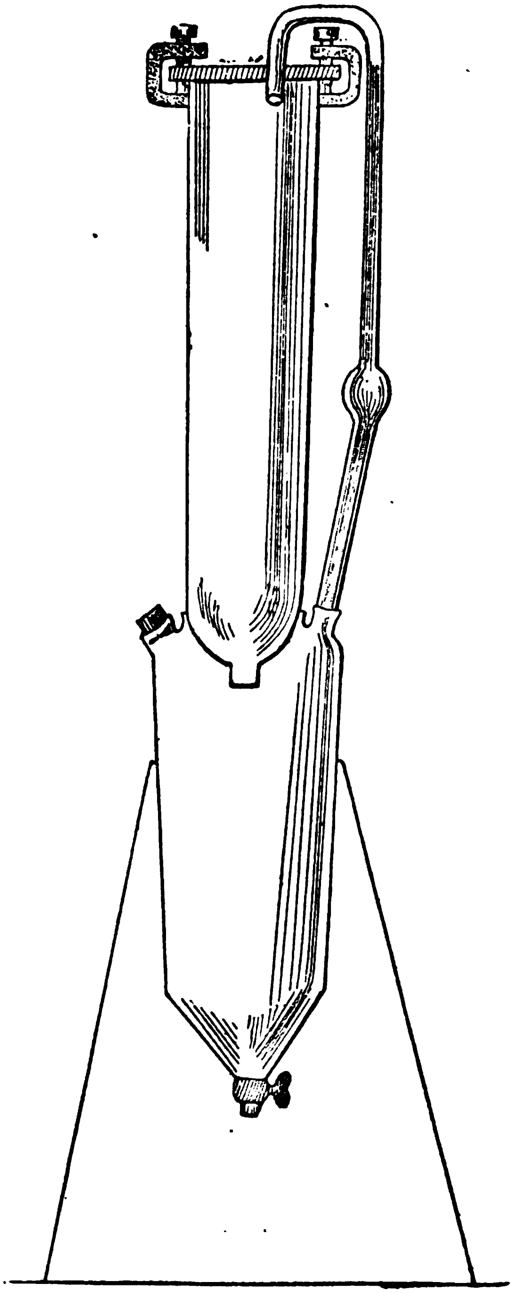

FIG. 2.—Compact Percolator.

The arrangement for drawing off the percolate at the lowest point in the receiver will be found most convenient in fractional percolation, as the percolate arranges itself into layers according to specific gravity, and need not be separated into fractions until the process is concluded.

The percolator and receiver now in use are constructed of tinned iron—the chief objection to which is its opacity. The effects of this, so far as the receiver is concerned, may be overcome by the employment of a glass gauge. But, if practicable, the use of a glass apparatus would be far preferable.

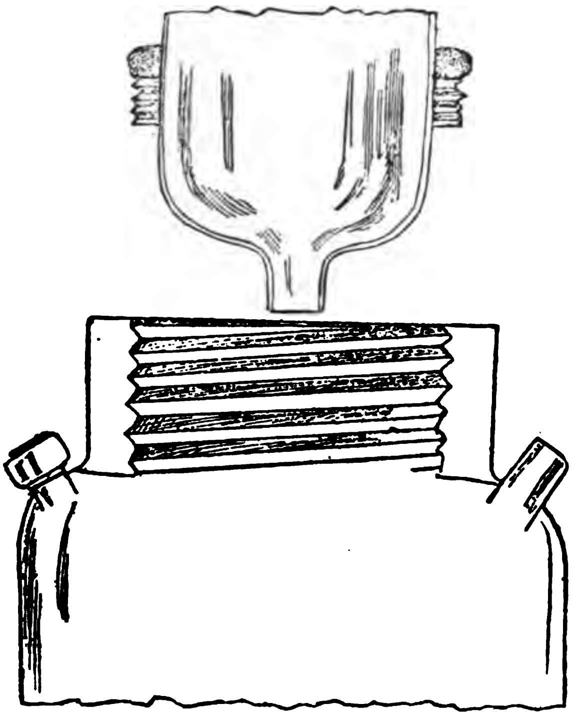

FIG. 3 —Screw-joint of Percolator and Receiver.

Being constructed in conformance with the same principles as the original form, there is no doubt as to the economic success of this apparatus, and, with its additional compactness and simplicity, it will be found a most desirable addition to the laboratory.

Thus it will be seen that the employment of cautionary measures in alcoholic percolation is as advantageous as in the percolation of more volatile liquids; for the preceding figures show that while the average loss by the employment of the official method was 16.2 per cent., the mean loss by process No. 2 was but 5.7 per cent.—nearly one-third. Considering the vast amount of alcoholic percolation practiced in this country, methods of reducing waste in the operation are certainly worthy of more attention than has been heretofore bestowed upon the subject, and it is therefore hoped that this paper may be the introduction to a thorough investigation of that phase of percolation which most nearly affects all practical pharmacists—the economic side.

New Orleans, May 5, 1892.

THE COLLAPSE OF FOUNTAIN LININGS.

BY THOMAS WARWICK.

There are two varieties of collapse with which druggists are unfortunately but too familiar: collapsed fountain-linings, and collapsed pocket-books. In fact the two very often go together, for in this nineteenth century the pocket-book is the pressure-gauge or indicator that informs us when everything is not going just as it should.

Fully nine-tenths of the troubles experienced with portable fountains are due to this collapsing, and consequently the subject is of considerable importance to every pharmacist who dispenses soda-water. Moreover, the causes of the collapsing are so imperfectly understood by the majority of dispensers that they come to regard it as a necessary evil, one from which no amount of care will guard them; when in reality, if proper precautions were observed, the collapse of fountain-linings would become a thing of the past.

Before, however, considering the prevention of this collapsing, we must first understand what we mean by the term, and afterwards what the causes are which tend to produce this "buckling-in" of the soft metal lining. Then, and then only, can we hope to discover efficacious means for preventing these annoying accidents.

Every properly constructed portable fountain on the market consists of a strong metal shell inclosing an inner vessel made of sheet block-tin. Now the tin vessel is, of necessity, quite weak, and could hardly stand any pressure at all were it not for the stout metal shell that incloses it. But while this shell suffices to preserve it from all danger due to internal pressure, it cannot offer any assistance if there happens to be an external pressure on the tin lining. In this case, or at least whenever the outer pressure is stronger than the inner one, the lining is forced in—or, in technical terms, it collapses.

Let us first consider the disadvantages of this collapsing. Evidently one of the results of the buckling-in of the lining is that the capacity of the fountain is diminished. A fountain which before the collapse had a capacity of 15 gallons, may now only be able to hold 14. This, however, is not a matter of vital importance; the great danger is that, in collapsing, the lining has become weakened or injured. This is almost inevitably the case; and as, when the fountain is charged again, the lining will usually be forced out to its normal position, it follows that repeated collapsing will sooner or later cause it to spring a leak.

With stationary fountains, the collapse of the lining produces other serious disadvantages; for if the lining is forced in too far, it will prevent the agitator from turning; and if the operator resorts to force to overcome the unwonted resistance which he meets with, the result may be a serious injury to the lining or agitator—sometimes to both.

In any case, however trifling the injury to the lining, if the fountain leaks, the dispenser must resign himself to the very unsatisfactory remedy of sending it on to the manufacturer for repairs, an entire new lining being usually required. The expense is considerable, especially if the freight charges be added; and the druggist is deprived of the use of his fountain for probably a couple of weeks, which may mean a serious loss to him during the height of the busy season.

We are now prepared to consider the different causes which may produce a collapsing of the lining. It is claimed by some soda-water manufacturers that the weight of the water in the fountain may sometimes be sufficient to cause collapsing, especially if the fountain be violently agitated—for the water, by pushing out the fountain at both ends, necessarily causes the sides to be drawn in. With generators, too, it is claimed that the weight of the materials (especially in vertical generators) may cause collapsing by thus drawing down the lining. But while such a case might possibly arise, I very much doubt if it really ever occurs in practice.

Leaving this case, therefore, out of consideration as immaterial, we find that all cases of collapsing of linings are due to the fact that a partial vacuum is formed in the fountain, and the weight of the atmosphere then forces in the soft metal lining. There is but one possible exception to this rule; it is in the rare case when some external pressure other than that of the atmosphere can be brought to bear against the outer surface of the tin lining. This sometimes happens when there is a small pin-hole in the lining. If the fountain then be left charged for any length of time, a certain amount of gas will be forced through this pin-hole, and find its way behind the lining, where it will be confined between the lining and the outer shell. If now the fountain be emptied, there will be nothing to counterbalance the pressure exerted by this gas behind the lining; and as it has not time enough to escape through the pin-hole, the natural consequence will be that the lining will be forced in by the pressure of the imprisoned gas.

I have known of such cases to occur, and unfortunately there is no remedy for them, except to put in a lining without pin-holes. But I must say that comparatively few cases of collapsed linings are due to this cause.

Turning now to those much more numerous cases where the trouble is due to the formation of a vacuum in the fountain, let us see in what ways such a vacuum may be formed. A fountain always contains either water, carbonic acid gas, or air—usually all three together. Now, water being incompressible, it follows that if a vacuum be formed it must be either by the absorption of air or gas by the water, or by the compression of the air or gas.

The first cause is perhaps the most frequent and the least understood. A fountain that has been once charged with soda-water will, even when emptied and left standing with the cock open, retain a considerable quantity of carbonic acid gas. Now this gas is readily soluble in water; consequently if the druggist, when about to make a charge, pours his cold water into the fountain, and then closes the stop-cock, the metal lining will collapse at the end of a few minutes; for, the cold water absorbing its own volume of carbonic acid gas, a vacuum is formed in the interior of the fountain, and, as we have seen, the formation of a vacuum will in all cases produce a collapse of the lining.

Agitation, too, as it favors the absorption of gas by the water, may produce the same results; hence fountains should never be agitated until they have an internal pressure of ten or fifteen pounds. It is a common practice of dispensers to set their rockers going before admitting gas to the fountain; and as this favors the absorption of the gas by the water, it will also favor the production of a vacuum and consequent collapse.

Having thus considered the question of absorption, we come to that of compression. In what different ways can the air or gas in the fountain be compressed so as to form a partial vacuum? There are several, the most common one, perhaps, being by a reduction in temperature. If an empty fountain be tightly closed during the day-time, a certain amount of air will be imprisoned; and as during the night the temperature will fall, it follows that the air will be compressed into a smaller volume by this reduction in temperature, and a partial vacuum will be formed. Result, an unexplained collapse of the fountain-lining.

Another common cause of collapse caused by compression, occurs in the case mentioned above when the fountain is agitated before the pressure has reached ten or fifteen pounds. In such a case, when the fountain is rocked, the water is dashed violently from one end of the vessel to the other, compressing the air or gas in front of it, and so creating the empty space that nature abhors. This is especially liable to occur if the fountains are agitated on a frame instead of on a rocker.

There is one more cause of collapse to be considered: When a fountain is discharged in such a way that air cannot find its way in as fast as the water is discharged, the old trouble will manifest itself. This frequently happens in washing out portable fountains, for, when emptying the water through the only bung of the fountain, the egress of the liquid prevents any air from entering. Consequently, as soon as a certain amount of water has escaped, a vacuum is formed and the lining collapses.

This completes the record of the various causes which may produce a collapse of the lining; and a careful consideration of the points brought up will show us what precautions are necessary in order to avoid this trouble.

It may be asked at this stage of the inquiry, why manufacturers do not make a lining that will not collapse? Perhaps at some future day they may be able to do so, but up to date all efforts in this direction have failed. To increase the thickness of the linings is quite expensive, and, while it reduces the chance of collapsing, the injury to the lining from each collapse is correspondingly increased, so that little if anything is gained. In like manner the various attempts made to strengthen the lining by ribs or by stays and braces have been found unsatisfactory. To use a wash or thin coating of metal instead of a sheet-lining, while it does away with collapse, exposes the beverage to noxious contamination if a portion of the coating should wear off or become injured, which contingency is continually occurring. To make an air-tight external case, has also serious disadvantages. Various devices have been patented at one time or another for preventing the collapse of linings by means of automatic devices which serve to keep the internal pressure always equal to that outside the vessel; but it has been found that these devices require more care to keep in good working order than would be necessary to prevent the lining from collapsing under ordinary circumstances.

We shall now consider what are the precautions necessary to secure complete immunity from collapsed linings.

Let us first take up the case of portable fountains. We have seen that the trouble can only arise when the fountain is closed and has less than fifteen pounds pressure internally. Consequently the first rule to be borne in mind is: When the fountain is not under pressure, the cock should be left wide open. Then, no matter what happens, the internal pressure can never become less than that outside, no vacuum can be formed, and no collapse can occur. But there is so much danger of the cock being closed through inadvertence that the only really safe rule is to take the cocks completely out of the fountains whenever the latter are not under pressure.

Especially is this necessary when shipping fountains to a distance. Under no circumstances should the cock be left in the fountain, for it will almost certainly be closed in transit, and the lining will run great risk of reaching its destination in an absolutely worthless condition. As, however, impurities of all kinds might fall in through the open bung-hole, and it might be difficult to properly clean the fountain afterwards, a good plan is to force a square plug of wood into the bung. This will leave a free passage for the air, but will prevent most other substances from finding an entrance. Moreover, the plug will afford a convenient hold for those who handle the fountain in transportation.

The second great principle to bear in mind is: Never to agitate the fountain until the pressure on the gauge shows about fifteen pounds to the square inch. Moreover, the druggist should be careful to close the cock of the fountain only at the very last moment, just when he is ready to begin generating the gas; for otherwise, as we have seen, the absorptive powers of the cold water may be sufficient to cause collapse. This is a point of such importance, and is so frequently overlooked by the large majority of druggists, that I desire to lay special stress upon it.

When it comes to the question of washing out portable fountains, while the danger is greatest here, there are not many cases of collapse from this source, as the majority of druggists do not consider it necessary to wash out their fountains, believing that the soda-water that passes through keeps them perfectly clean. In fact, it is rare to find a man who makes it a point to wash them even once a year.

Now, while it is true that the soda-water does to a certain extent keep the fountain clean, it is also undeniable that some foreign matter adheres to the lining, and will in the course of time give the soda-water a musty odor and even a perceptible taste. Hence it is well to occasionally wash out the fountains; and if done in the proper manner, no danger of collapsed linings need be apprehended.

The special machines for washing fountains are too expensive for the druggist, but all that he really needs is a stiff tube about six inches longer than the fountain. With the aid of this tube it is easy to discharge the water from the fountain without creating a vacuum, for if the tube be inserted through the bung of the fountain it will allow the air to enter as fast as the water is poured out, and will thus prevent all danger of collapsing. It is possible, by turning the fountain slowly and with great care, to discharge the water without causing a collapse, but the danger is so great that every druggist should use a tube as above directed.

The linings of generators are much thicker than those of portable fountains, but they will collapse in the same way and from the same causes. The rules for generators, however, differ slightly from those for fountains, although the principal rule is the same, namely: That the generator must not be left tightly closed, except when the vessel is under pressure. When shipping a generator, too, all the caps should be taken off, so that the air may have free access to the interior of the gas-washers, the vitriol chamber, and the generator body. Each of these has its own special lining which can collapse independently of the others.

When discharging a generator, as soon as the pressure has fallen to, say, about five pounds to the square inch, one of the upper caps should be opened to allow for the entrance of atmospheric air and prevent the formation of the dreaded vacuum, which is always the precursor of a collapse.

There are but few druggists who employ stationary fountains, but those that do will find that the same rules apply for these as for the generators, with the additional one that the agitator of the stationary fountain should not be set in motion until the pressure-gauge indicates at least ten pounds.

In conclusion I would say that, while the subject is a most complicated and difficult one, yet if the general principles are once understood and are well borne in mind, the druggist can with a little care entirely prevent the annoying collapsing of his generator- or fountain-linings.

HASH.

BY AN OLD BACHELOR.

"It is not what you say, but when you say it."

⁂

"In these days of hurry and strife for the first places in the race of life, it is even more important than in former years that a man be diligent in his business and look after its every detail closely."

⁂

When a customer asks for some well established and well advertised patent medicine it is generally best to sell it to him without comment. * * * If you substitute some similar article, it is less likely to give satisfaction, and the customer will blame you for interfering.

⁂

"Don't get behind." * * * It is often advantageous to keep on hand a reasonable supply of certain liquids in neatly labeled bottles of commonly demanded sizes. * * * This is especially applicable to glycerin, the viscosity of which frequently causes inconvenience and annoyance when you undertake to pour it hastily from one bottle to another. * * * Benzin, which is usually stored in the cellar as a fire precaution, is another example, and castor oil is another.

⁂

The practice of holding a cork or pin between the teeth is extremely dangerous. * * * Much inconvenience, and even death, has resulted from such articles being accidentally drawn into air-passages by dint of sudden cough, sneeze, or laughter.

⁂

I opened the morning paper,
And the first thing that met my eyes
Was a picture, the head and shoulders
Of a man most Wondrous wise.

I gazed on his massive forehead—
On the well turned nose and chin;
And I said, "Now here's a statesman,
And I'm not acquainted with him."

So I read his name below the cut—
It was Isaac Newton Pitts;
He had taken a patent medicine,
And was cured of falling fits.

—*Danbury Sunday World.*

⁂

The following query appeared over the signature of an Indiana druggist in the regular "query column" of a well known pharmaceutical journal: * * * "What makes lacopodium and chlorate of potassium when rubbed together in a mortar go off with a puff? A doctor several months ago prescribed them together for pills, and I could make no mass of them, as every time I tried to work them they would go off in smoke."

⁂

When you hang a sign outside your place of business, let it be somewhat original in design and of good quality.

⁂

Speaking about window displays—I read some time ago that Druggist Calkins, of Ann Arbor, Mich., displayed in his window the jaw of a mastodon, accompanied by a card declaring that the eight teeth still remaining in the jaw were preserved by use of Calkins' Tooth Powder.

⁂

It is a good idea to "turn things over" in the spring. * * * If you have an excessive stock of some single article, perhaps one of the wholesale dealers from whom you obtain supplies would be willing to take it off your hands in exchange for goods more readily salable in your section.

⁂

Say "Thank you"—not "Thanks"—when you wish to be polite.

⁂

If a druggist wishes to be successful in business, he must not imagine that he has attained the summit of knowledge when he has passed the examinations. Knowledge of the ways of the world, and tact in meeting and dealing with men and women, are quite as valuable and as necessary as Chemistry and Materia Medica, and they usually come a little later in life than the age of 21.

⁂

Be sure that your clerks are in full sympathy with your business interests—if you find that you have a chronic dissenter, replace him with some one more congenial. Remember that one grumbler can demoralize all the clerks in a store, where without this pernicious influence they might be entirely satisfied.

⁂

Incompetency in a clerk brings a bad reputation to a pharmacy, and many a business suffers because the clerk is either reckless, negligent, impudent, hasty, has bad manners or bad habits. The customers of most drug stores are largely of the feminine sex, and they are quick to discern the absence of good qualities. As a rule they do not complain to the employer, but they, their trade, and their influence go elsewhere. No employer who has a pride in his business and any desire to see it increase can afford to retain clerks who are unpopular with his customers.

THERAPEUTIC NOTES OF INTEREST TO PHARMACISTS.

BY DR. H. M. WHELPLEY, PH.G.

Painful felons—and what felons are not painful?—can be aborted in some instances. Prof. Hare says the best method is an application of a poultice made of bread crumbs and lead-water.

Sprains are now treated in France by the use of salicylate of sodium; one drachm of the remedy is used in twenty-four hours. So says the *American Journal of the Medical Sciences.*

A non-bitter solution of quinine is always in demand when quinine is to be administered. A German mixture is made as follows:

Sulphate of quinine.............	15 grains.
Dilute sulphuric acid............	15 minims.
Saturated solution of saccharin ..	3 fluidrachms.
Spirit of peppermint............	2½ fluidrachms.
Water..........................	5½ fluidounces.

Lactic acid in chronic diarrhœa of adults is, according to Dr. Hayem, just the proper remedy. His formula is as follows:

	Parts.
Lactic acid............................	1
Simple syrup..........................	20
Water.................................	80

The dose of this is half a tumblerful between meals.

Yawning is now recommended as a remedy in the treatment of certain affections of the throat. The action of the muscles has the effect of massage. It is certainly an inexpensive remedy.

Citric acid for nose-bleeding is a remedy recommended by Dr. Hunt in the *Medical World.* Lemon-juice is a very good form in which to administer the citric acid. The nasal cavity should be filled with the lemon-juice or a solution of the acid.

Remedies for snake-bites are without number, although whiskey is probably more popular than any other. Dr. Goodlett, in the *Medical News*, bathes the wound with the following mixture:

Salicylic acid...................	2 drachms.
Water of ammonia	2 fluidrachms.

He also administers internally whiskey and ammonia.

Subnitrate of Bismuth a Dangerous Remedy.—A writer in the *Medical Press* reports the case of a woman who died from what was supposed to be chronic intestinal catarrh. After death a portion of the bowel was found to be occupied by a large greyish mass which proved to be 85 per cent. subnitrate of bismuth, the remaining portion being organic matter. We doubt if this announcement will prevent physicians from continuing to prescribe subnitrate of bismuth.

Sore nipples can be cured, according to a correspondent of the *Medical Brief.* He applies powdered gum arabic often during the day and night, and keeps an oiled cloth of cotton or linen over the parts to prevent sticking. This application does not interfere with the child's nursing.

Male Fern Poisonous.—It has long been known that male fern naturally produces toxic symptoms. Recent investigation shows that this property is especially developed when the drug is administered with or followed by castor oil. It is probable that the oil acts as a solvent on the poisonous principle of the male fern.

A liniment for burns, recommended by the *Medical and Surgical Reporter*, is made as follows:

Camphor Chloral	ää..................	120 grains.
Chloroform Ether	ää	120 minims.
Tincture of opium Oil of sassafras	ää.........	60 minims.
Soap liniment...........	to make	16 fluidounces.

Chronic gout, according to the *Medical Review*, is best treated with the following mixture:

Acetous extract of colchicum ...	6 drachms.
Extract of aloe	6 grains.
Extract of belladonna	1 grain.

Make into six pills. Take one at night twice a week.

We have found the salicylate of lithium a very useful remedy.

Mignonette for tapeworm is said to be a popular remedy in Russia. The drug is given in the form of a decoction. The usual precautions of taking it on an empty stomach, and following the same with a dose of castor oil, must be observed.

The acid nitrate of bismuth, according to Dr. Curtman, is a specific in all skin diseases caused by microbes.

Antiseptic paper can be easily prepared in the drug store. It is used as a dressing over wounds, and held in position by means of a bandage. The *Therapeutic Gazette* gives the following formula:

Bichloride of mercury..........	2½ drachms.
Glycerin........................	6 drachms.
Boiled and cooled distilled water.	1 pint.

Impregnate unsized paper with this solution and allow it to dry.

Cough cures are almost as numerous as people who cough. A medical journal proposes a simple remedy which is quite efficient. It is a mixture of two parts of glycerin with one part lemon-juice. This is useful in some forms of cough, such as sore and dry throats.

Chapped hands trouble some people whose skin is prone to cause them distress during cold weather. Wendell recommends the following useful application for chapped hands:

	Parts.
Green soap	1
Compound tincture benzoin	4
Glycerin	8
Rose-water	16

Frost bites do not always yield to local applications, but Lassar claims that the pain is relieved by the following ointment:

Oil of lavender	30 minims.
Phenol	30 grains.
Olive oil	5 fluidrachms.
Lead Lanolin } āā	10 drachms.

Mix.

Antifebrin has been employed by persons desiring to take their own life, but it is not likely to become as popular as "Rough on Rats." A German took 180 grains, and was restored to health by medical aid. Injections of ether were used, and the stomach washed out with water.

As a mouth-wash to prevent infection from various diseases, a writer in the *Brooklyn Medical Journal* recommends the following:

Benzoic acid	1 drachm.
Tincture eucalyptus	5 fluidrachms.
Absolute alcohol	4 fluidounces.
Oil of peppermint	10 drops.

Mix.

Of course this must be well diluted as used.

Fissures of the tongue are cured, according to a French medical journal, by applications of the following:

Phenol	40 grains.
Tincture of iodine Glycerin } āā	3 fluidrachms.

Resorcin is now frequently used in the treatment of skin diseases. This comparatively new remedy is employed in the form of a weak paste. Lassar recommends the following formula:

Oxide of zinc	6 drachms.
Resorcin	3 drachms.
Starch	6 drachms.
Liquid paraffin	10 drachms.

Experience has taught us that the oxide of zinc should be chemically pure, and the starch well powdered before mixing it with the other ingredients.

Creasote hails us now as a remedy in consumption. Many forms of preparation containing this remedy are to be found in the market. A very serviceable mixture is made as follows:

Creasote	45 minims.
Glycerin	1 fluidounce.
Water q.s. ad	2 fluidounces.

The dose is one teaspoonful three times a day. It is essential to employ pure creasote, and I find a good wine a convenient method of administering the above mixture. The size of the dose can be increased gradually after the first two or three weeks.

Dissolving Lead with Mercury.—A case is reported in the London *Lancet* of a plumber who spilled some molten lead in his ear. Of course the metal cooled and formed a solid mass, which was difficult to remove. The task was finally accomplished by means of mercury, which softened the metal so that it could be washed out. The *Therapeutic Gazette* reports the result of subsequent experiments which show that the metal could not have been pure lead, but was probably a solder which is easily dissolved by means of mercury. It is probable that mercury could not have dissolved out the block if it had been pure lead.

Bernhardt's Balm.—Actresses and others who make a study of beautifying the skin and preserving their complexion succeed to a degree that can scarcely be realized by those who only occasionally "make up." The public have an idea that actresses use some special preparation which is the secret of their charms. According to the *Therapeutic Gazette*, Her Madam Bernhardt has let out the secret of her perpetual youth and beauty. She claims it is a liquid in which she bathes from head to foot. The formula is given as follows:

Water of ammonia Spirit of camphor } āā	2 fluidounces.
Sea salt	1½ cups.
Alcohol	2 cups.

The above ingredients are placed in a quart bottle, which is then filled with boiling water; this is to be shaken before using. The method of application is to bathe the entire body with a sponge dipped in the undiluted liquid. The domestic terms employed in the formula indicate that it might have originated with this celebrated actress.

Bed-bugs have always been detested, and now we find a new charge being brought against the industrious little insects. It is claimed that they are the means of transmitting consumption. A French physician managed to collect thirty of the bugs and carefully examined them; he found that 60 per cent. of them contained germs of consumption. Perhaps this will have the effect of increasing the price of insect powder.

The chloride of ethyl has long been known as a local anæsthetic. The Jefferson Medical College has given it new notoriety by its use in the removing of sebaceous cysts.

Hepatic colic renders a patient willing to take almost anything. Dr. Lemoin employs either chloroform or ether. He gives teaspoonful doses every fifteen minutes of one or the other of the following prescriptions:

Syrup of gum arabic	4 fluidounces.
Ether	1 fluidrachm

Or,

Chloroform Tincture of myrrh } āā	15 minims.
Syrup	3½ fluidounces.

Bread-and-milk poultices are condemned by Prof. Keen, who claims that they are the means of conveying inflammation. Perhaps it would be well to stop eating bread and milk on this account.

NOTE ON ACID SUBLIMATE DRESSING.

BY ADOLPH LEVY.

E. Laplace (*Deutsche Medicinische Wochenschrift*) published a formula for making a solution of mercuric bichloride which possesses the properties of preventing the changes that are going on in the presence of organic matter—particularly the decomposition of albuminous matter not prevented by the addition of ammonium chloride, to which chloride of sodium is generally added in aqueous solutions of mercuric chloride. As these themselves were far from possessing the stability required for the purpose of preparing dressings, the author substituted for them with most gratifying results tartaric acid* as follows:

	Parts.
Mercuric chloride	1
Tartaric acid	5
Distilled water	1000

Compressed tablets have been prepared containing in each: mercuric bichloride 3.5, tartaric acid 17.5.

Two of these tablets dissolved in one pint of water will make a solution of the strength of 1 to 1000.

The tablets may be colored with a harmless pigment to guard against their careless use. They are instantly soluble in warm water. Gauze, thoroughly sterilized, after being washed and ironed, and immersed in the solution of the strength 1 to 1000, retained its activity in moist condition for over one year (the solution containing 1 per cent. of glycerin). The tartaric acid acts as a mordant to fasten the medicinal agents thoroughly to the fibre of the material.

When used for continuous application as an irrigating fluid to extensive mucous surfaces in very weak form, it acts promptly as a stimulant (in from 1:2000 to 1:4000), and has been extensively employed by active practitioners, who report very favorably, considering it an improvement on the old-style form of solution.

Brooklyn, N. Y.

A PILL EXCIPIENT FOR GENERAL USE.

BY N. A. UPHAM.

In the various journals there have appeared, from time to time, a number of articles on pill excipients; especially those adapted for use in making pill masses containing ingredients which are liable to deterioration through the application of the more common excipients, or owing to other peculiarities make it impossible to obtain satisfactory results from their use.

With these, we presume, the active pharmacist is quite familiar. Laying aside these few exceptions which occur but rarely in our every-day practice of compounding prescriptions, there should be on every well regulated prescription counter a good pill excipient for general use which shall comprise the good qualities of the numerous individual ones, one that is equally efficient in massing quinine and the lighter powders or the heavy substances like calomel, subnitrate of bismuth, or reduced iron. One writer says: "A pill mass should have the consistency of a thick, well mixed dough, which shall be easily removed from the side of the mortar and spatula, and must not stick to the fingers while being kneaded."

An excipient made from the accompanying formula will produce results in the majority of instances which combine the qualities of above observations, and does away with the half-dozen or more sticky and untidy excipient bottles so often found behind the prescription counter:

Powdered acacia	1 drachm.
Powdered tragacanth	2 drachms.
Glucose	5 drachms.
Glycerin	3 ounces.

Mix the powders in a suitable dish, and thoroughly incorporate the glycerin and glucose until a perfectly smooth mixture is obtained, then apply sufficient heat to thicken. When cold, transfer to a screw-cap ointment jar or other convenient receptacle.

CHEMISTRY.

SULPHO-SALICYLIC ACID AS A URINE ALBUMIN TEST.

BY GEO. F. MC GUIRE.

A great many urine albumin tests have been discovered and discussed by our pharmaceutical brethren during the last few years, some of which are of real value, while others, being equally valuable as reagents, require considerable time and labor to accomplish the desired results.

While claiming no originality as to the discovery of this preparation, I conclude, after careful use of the common and newly introduced tests, that, for bedside urinary testing, the portability and value of this preparation make it far in advance of the others. Sulpho-salicylic acid is a product of the action of sulphuric anhydride on salicylic acid. The chemical change occurring is thus:

$$HC_7H_5O_3+2(H_2SO_4)=C_6H_3.SO_3H.OH.CO_2H$$

Its method of preparation is as follows:

Take of sulphuric anhydride, two parts; salicylic acid, one part; heat on a water bath till dissolved. After standing a short time, crystals of a brownish hue are formed, which by redissolving in distilled water, and recrystallizing, assume a light gray color readily soluble in water. By this means the presence of egg albumin can be demonstrated with certainty in a solution of one part of the latter in 20,000 parts of carbonated water. To apply this test, all that is necessary is to add a few crystals of the preparation to a small quantity of clear urine, and shake. The appearance of turbidity or a precipitate, according to the quantity of albumin contained in the specimen, indicates with certainty the presence of albumin. For the filtrate tested with other albumin reagents fails to respond, showing the completeness of the precipitation. Normal urine and solutions of uric acid, peptones, and glucose were tried, but gave negative results. In ten samples of suspected urine it exhibited a prompt and ready reaction, and in comparison with the nitric acid test in urine containing a very slight amount of albumin its superiority was clearly shown by the reaction produced by it, while that with nitric acid exhibited a nearly invisible reaction. The great value of sulpho-salicylic acid is in its indifference to all the other constituents except albumin alone, while in many of our customary tests phosphates, urates, etc., are sometimes precipitated, greatly confounding the inexperienced.

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*Tartaric acid is in use for at least six years for this purpose by Max Kohnemann, Berlin.—C. S. N. H.

Waterbury, Ct.

BOTANY AND MATERIA MEDICA.

NOTES ON SOME TONIC BARKS.

BY P. L. SIMMONDS, F. L. S.

A few descriptive notes on some of the tonic barks employed in different countries may lead to further investigations as to their properties and usefulness, for on some of these we require further information.

The bark of the horse-chestnut (*Æsculus Hippocastanum*, Lin.) has been recommended as a valuable febrifuge in intermittent and other fevers. It has been so employed with success in Italy, and has cured agues. It contains an astringent, bitter principle, which acts as a tonic.

The bark of *Sesbania grandiflora*, Pers. (*Agati grandiflora*, Desf.), a common East Indian tree, is very bitter, and is used as a tonic and in catarrh.

The bark of *Ailanthus malabaricus*, Dec., has a pleasant and slightly bitter taste. It is given in cases of dyspepsia, and moreover considered a valuable tonic and febrifuge.

That of *Acacia arabica* is also a powerful tonic.

The aromatic bark of *Alyxia stellata*, R. & S., has similar effects to those of *Canella alba* and Winter's bark, for which it may be substituted. It is stimulant and tonic, and is recommended as a remedy for chronic diarrhœa and nervous complaints.

The bark of *Ardisia paniculata*, Roxb., has tonic and astringent properties, and has been used in fevers and bowel complaints.

The fresh bitter bark of the South American tree *Aspidosperma Quebracho*, Grisebach, is reported to be astringent and febrifugal.

The bark of the spice bush *Benzoin odoriferum*, Nees, is highly aromatic, stimulant, and tonic, and is administered in decoction or powder in intermittent fever.

The bark of *Berberis vulgaris*, Lin., is astringent, stomachic, and tonic.

The bark of *Batula lenta* is used in North America as a tonic and astringent after dysentery, and in the diarrhœa of children.

The Indian bark of *Bignonia chelonoides*, Lin., is tonic, and has been employed in fevers.

The barks of *Brucea antidysenterica*, Mill., and *B. sumatrana*, Roxb., are serviceable as tonics, and useful remedies in dysentery and some cases of diarrhœa.

The bark of *Buena hexandra*, Pohl., like most other plants of this order, is very bitter, and is employed by the Brazilians as a febrifuge and for other purposes to which cinchona is applied. This and *B. Bogotensis* are among the false cinchona barks.

The bark of *Byrsonima crassifolia*, Dec., a Demerara tree, is employed as a febrifuge.

The bark of *Canella alba*, Murr., has an aromatic clove-like odor, and an acrid peppery taste. It is stimulant and tonic.

The bark of the shell-bark hickory (*Carya alba*, Nuttall) is tonic and anti-intermittent, and recommended for these properties in the debility following an acute attack of malaria.

The bark of *Ceanothus cæruleus*, Lagas., is employed in Mexico as a tonic and febrifuge.

The bark of *Cedrela Toona*, Roxb., is a powerful astringent, and has been found a good remedy in remittent and intermittent fevers, diarrhœa, and dysentery; and, though not bitter like cinchona, is a fair substitute for it in fevers, particularly when united with powdered Bordua nut. Rumphins states that an infusion of this bark, in combination with the root of *Acorus Calamus*, is given in Java in fevers and other complaints. Forster considers it especially useful in bilious fevers and inveterate diarrhœa.

The bark of the button bush, *Cephalanthus occidentalis*, Lin., is tonic, and has been used in North America, in the form of decoction and infusion, for periodical fevers.

The bark of the wild cherry tree (*Cerasus serotina*, Loisel.), which has a pleasant aromatic and bitter taste, is in North America considered one of the most valuable indigenous remedies as a sedative tonic for calming irritation and diminishing nervous excitement; it is also efficacious in dyspepsia and intermittent fevers. The bark of *Cerasus Capollin*, Dec., is considered a good febrifuge.

CINCHONA SPECIES.—The barks belonging to this genus of trees, and the alkaloids prepared from them, constitute the only really reliable remedies against fevers, and form the most important of our vegetable drugs. The natural habitat of the genus is a portion of South America, but the importance of their products has led to their introduction and successful cultivation in the West Indies, India, Ceylon, and Java.

The production of commercial bark is limited to about a dozen species, but three only are chiefly used in pharmacy, the others being employed to obtain the alkaloids.

Although very little bark now comes from South America, the name of "Peruvian bark" is still retained commercially.

The exports of cinchona bark from Ceylon and Java *in the years ending June*, have been as follows, in English pounds:

	CEYLON.	JAVA.
1889	11,890,000 lbs.	4,587,000 lbs.
1890	8,600,000	5,225,000
1891	6,900,000	6,000,000

The Java bark contains considerably more quinine than that from Ceylon.

The names of the three species retained in the British Pharmacopœia are: The yellow bark, *C. Calisaya*, Wedd.; the pale or Loxa bark, *C. condaminea*, H. et B.; and the red bark, *C. succirubra*, Pav.

In India it has been found that in nine-tenths of the fever cases cinchonidine is just as efficient as quinine, and at only about one-fourth the cost.

1. *C. Calisaya*, Weddell. This species is remarkable for the large amount of quinine which it contains, viz., from 5 to 6 per cent. of this alkaloid. There are other alkaloids obtained, among the principal of which may be enumerated quinidine, cinchonine, cinchonidine, and quinamine. Although quinine is the most valuable of the alkaloids, the use of others is also beneficial.

2. *C. condaminea*, H. & B., yields the Loxa or rusty bark, rich in alkaloids, of which more than half is quinine.

3. *C. succirubra*, Pavon. Red bark is remarkable for containing a notable proportion of both quinine and cinchonine, and is especially noticeable for its astringency.

C. officinalis, Hook. The official pale bark was originally imported from Loxa, Ecuador, in chests, and then picked and sorted; but the species is now extensively grown in India, Ceylon, and Java.

Commencing with an export of but 17,000 lbs. from Ceylon in 1876, the shipments rose to 15,500,000 lbs. in 1886, and 14,400,000 lbs. in 1887, but have since declined rapidly. The Ceylon bark is richer in quinine than the South American. The value of the cinchona bark exported from the island in 1883 was £365,088, but this had fallen to £49,000 in 1891, owing to over-production and a decline in price. The planters have now taken up with tea culture largely.

Passing to India, there were in 1888 10,600 acres under cinchona in Madras and Coorg. The imports of quinine into India in the official year ending March, 1891, were 30,498 lbs., and the exports 1,024 lbs.

The imports of cinchona bark into the United States have declined from 33,000 bales (about six million pounds) in 1880, to 3,000,000 lbs. in 1890; but the import of quinine has advanced from 228,000 ounces in 1879, to over three million ounces in 1890.

The British imports of cinchona average now about 107,000 cwt. yearly, the greater part of which (87,000 cwt.) comes from India and Ceylon, and less than 3,000 cwt. from South America. Cinchona bark is shipped in bales of from 200 to 300 lbs.

Cinnamomum Cassia, Blume, is generally believed to furnish the Chinese "cassia lignea," although some attribute it to a variety of *C. Tamala*. The bark is used in China as a stomachic and stimulant medicine; carminative, astringent, sedative, and tonic qualities being attributed to it. The compound powder is said to be an excellent remedy in the water-brash of Chinese dyspeptic patients. About two million pounds of cassia are imported annually into the United States.

Colubrina reclinata, Brongn. The bark of this South American tree, known as Mabee bark, is largely used in the West Indies in the preparation of a stomachic drink, but it is very bitter.

The bark of *Cordia Myxa*, Lin., is used medicinally in India as a mild tonic in fever; the decoction of another species (*C. Rothi*) forms an astringent gargle.

The bark of *Cornus florida* is used in North America as a tonic, astringent, and stimulant, and as a substitute for cinchona bark. Two other species of this genus, *C. sericea* and *C. circinnata*, Herit., furnish barks having similar properties, though not used in practice to the same extent.

The properties of the South American bark of *Crataeva Tapia*, Lin., are bitter and tonic, and it is said to have been employed with success in the cure of intermittent fevers. The bitter bark of the garlic tree (*C. gynandra*, Lin.) is also used as a tonic in Jamaica.

The famous buccaneers appear to have held cascarilla bark, the product of various species of *Croton* (chiefly *C. Eluteria*), in high esteem. Selecting the fresh cortex, they infused it either in wine or ardent spirits, and this constituted not only an agreeable bitter, but a prophylactic agent for the preservation of health. Dried in the sun and subsequently pounded into small fragments, the bark was smoked mixed with tobacco; and this method of employment, independently of the agreeable flavor inhaled, was equally considered an antidote against the attacks of febrile and other local maladies.

C. Cascarilla originally yielded the bark of commerce, until superseded by *C. Eluteria*. Macerated, the bark of this species yields a pleasant and palatable tonic for the relief of dyspepsia and loss of appetite.

The Colombian aromatic bark of *Croton Malambo*, Karst., is possessed of active bitter, astringent, and febrifugal properties. It is known as Malambo bark, and sometimes as Matias bark.

The bark of *Doryphora sassafras*, Endl., peculiar to New South Wales, is used as a tonic medicine taken in infusion.

The bark of *Petalostigma quadriloculare*, Mueller, contains a very powerful bitter, said to have the same properties as cinchona.

The bark of *Croton phebalioides*, R. Br., contains an agreeable aromatic bitter.

The bark of *Alstonia constricta*, Mueller, is intensely bitter, and possesses valuable febrifugal and tonic properties. A decoction is sometimes sold in the Australian colonies as "bitters."

Tabernæmontana orientalis, R. Br., a small Australian tree, has an intensely bitter bark, and a decoction is also sold in the colonies as bitters.

The bark of *Atherosperma moschata*, Labill., contains an agreeable bitter, of much repute as a tonic amongst sawyers in Australia. It is called "native sassafras" from the odor of its bark, due to an essential oil, closely resembling true sassafras in odor. Mr. Bosisto likens the smell of the inner bark to new ale, and says a decoction from this part of the tree is a good substitute for yeast in raising bread.

The Brazilian clove bark, *Dicypellium caryophyllatum*, Nees, with a hot, clove-like, peppery taste, has powerful tonic properties. It occurs in tubular quills, packed one in the other; in appearance it resembles cassia, but is darker and very hard.

The bark of the persimmon (*Diospyros virginiana*, Lin.) is said to be a powerful astringent and febrifuge, successfully employed in diarrhœa and dysentery. It is used as a gargle in sore throat.

The bark of *Drimys granatensis*, Lin. fils, known as Cancho bark in Venezuela, has much the same taste and odor as Winter's bark. It is much used in the provinces of the Menis as a tonic in the cure of colic, and is in general reputation among the natives as a spice for the seasoning of food.

The bark of the other species, *D. Winteri*, Forster, is also aromatic, and was formerly regarded as stimulant and tonic; but its use is now nearly obsolete in Europe and North America, although still employed in South America as a remedy in colic, diarrhœa, and other diseases.

In Tahiti the bark of *Erythrina indica*, Lam., there called "Atæ," is used by the natives as an astringent and antibilious medicine. It has febrifuge and antiseptic properties; a decoction is used in intermittent fevers.

The bark of the shrub *Euonymus atropurpureus*, Jacquin, known as Wahoo, is used in medicine as a tonic alterative in North America.

The bark of the West Indian shrub *Exostemma caribæum*, W., is reputed to be a good febrifuge. It has a very bitter, nauseous taste and disagreeable smell. The barks of several other species of this genus have more or less febrifugal properties.

The bark and leaves of *Fagus ferruginea*, Aiton, are astringent and slightly tonic, and used in mild diarrhœa.

The barks of several species of *Ficus*—*F. bengalensis*, Gasp., *F. indica*, etc.—are considered by the Hindus as powerful tonics.

The bark of *Fragroe fragrans* is successfully used in Malacca in malarious fevers occurring epidemically; it contains traces of strychnia.

The bark of *Fraxinus excelsior*, Lin., is regarded as tonic. That of the black ash (*F. sambucifolia*, Lambert) is also tonic and astringent, and may be used for all internal and external purposes where these properties are useful.

The Colombian Rutaceæ, *Cusparia trifoliata*, Engler., *C. febrifuga*, H. & B., is said to yield both the Cusparia and Angustura barks, by some authors; but Dr. Hancock considers the latter to be the product of *Galipea officinalis*, probably the same species. It is official in the United States Pharmacopœia. The bark occurs in straight pieces of various sizes, some nearly flat, others more or less quilled. The taste is bitter and slightly aromatic. It is not in very extensive use except in South America. An infusion of it is sometimes prescribed as a stimulant tonic in bilious diarrhœa, dysentery, dyspepsia, etc. Aromatics are generally combined with it, to prevent nausea. The medicinal properties are due to the volatile oil and bitter principles in the bark. Dr. Hancock speaks of Cusparia bark as "one of the most valuable febrifuges we possess, being adapted to the worst and most malignant bilious fevers; while the fevers in which cinchona is chiefly administered are simple intermittents, for the most part unattended with danger." It is believed that this bark is the chief ingredient in the popular Augostura bitters now made in Trinidad.

The fibrous, thin, yellow bark of *Geissospermum Vellosii*, Allen, from Brazil, is intensely bitter and possesses eminently febrifuge qualities.

The bark of *Gomphosia chlorantha*, Wedd., much resembles Calisaya quill, and was at one time sold for it.

The bark of the small African tree, *Gonisma Kamassi*, E. Meyer, contains a pleasantly bitter tonic principle.

The bark of *Guatteria longifolia*, Wall., a native of the East, has tonic and diuretic properties, and is used in Ceylon in the treatment of fevers and dropsy.

The bark of the witch hazel (*Hamamelis virginiana*, Lin.) is bitter, astringent, with a slight sweetish taste. An extract is used, in doses of one or two drachms, as an astringent tonic and sedative.

The bark of the small African tree, *Hollarrhena febrifuga*, Kl., is used by the Portuguese on the Zambesi, under the name of "Luina," as a substitute for cinchona, and it is mentioned by Dr. Livingstone, who in his Travels says he employed it himself in decoction, and found it very efficacious in fevers, etc.

Another species, *H. antidysenterica*, Wall., of India, yields the white conassi bark, used medicinally as a tonic and febrifuge; but it is chiefly esteemed for its antidysenteric properties, being a sure remedy.

The inner layers of the bark of the Indian tree, *Hymenodictyon excelsum*, Wall., *Cinchona excelsa*, Roxb., possess strong bitter and astringent properties resembling cinchona, but when fresh in a greater degree, the taste being much stronger and more durable. The drug seems likely to attain a European interest.

The bark of *Illicium floridanum*, Ellis, being aromatic and spicy, is used with effects analogous to other aromatic barks, being a powerful stomachic and carminative.

A decoction of the bitter bark of *Inga unguis-cati*, Willd., is very astringent, with the reputation of acting as a diuretic.

The inner bark of the butternut (*Juglans cinerea*, Lin.) has been used in North America with success in intermittent and remittent fevers.

The bark of the spicewood (*Laurus benzoin*) is used in the States as an aromatic tonic and stimulant in ague and typhoid fever.

The barks of the species of larch are astringent and gently stimulant, and much used in the United States.

The bitter and strongly aromatic bark of *Liriodendron Tulipifera*, Lin., is used in medicine in the United States as a stimulant, tonic, and diaphoretic. It is usually administered in the form of a powder in intermittent fevers, dyspepsia, etc., the decoction and infusion being less powerful.

The bark of *Magnolia glauca*, Lin., is considered diaphoretic, stimulant, and tonic, and has been employed in intermittent and remittent fevers. The fresh bark, macerated and steeped in brandy, is a popular remedy for rheumatism. The bark has a bitter spicy taste and an aromatic odor, and is usually administered in powder, being much more powerful than when given in infusion. The barks of two other species, *M. acuminata* and *M. tripetala*, both also natives of North America, have properties similar to the above, and are used for like purposes.

The bark of the New Granada climber, *Marsdenia Condurango*, is said to be tonic and diuretic. It is official in the German Pharmacopœia.

The bark of the *Massoia aromatica*, Beccari, of the East, has tonic properties and is rich in essential oil, resembling cloves in odor.

The bark of *Michelia champaca* is bitter and aromatic, and forms an excellent substitute for guaiacum. It is useful in intermittent fevers.

The bark of *Mimusops Elargi*, Lin., is an astringent tonic, and in decoction forms a good gargle to promote salivation.

The bark of *Monnina polystachia*, Ruiz, is detergent and antidysenteric; it is used with great success in the case of dysenteries and irritating diarrhœas in Peru, where it is preferred to quassia. *M. salicifolia*, R. & P., has the same properties.

The bark and leaves of *Mussænda frondosa*, Lin., are esteemed as tonic and febrifuge in the Mauritius, where they are known as "wild cinchona."

The bark of the Dutch myrtle, *Myrica Gale*, Lin., is astringent and stimulant. That of *M. sapida*, Wall., is largely used in medicine in India as a stimulant in catarrhal fever, cough, and affections of the throat, as a gargle.

The bark of *Nauclea cadamba* is used in native medicine in India, and is supposed to possess febrifuge and tonic properties.

The bark of the greenheart tree of British Guiana, *Nectandra Rodiæi*, Schomb., is tonic, astringent, and febrifugal, and furnishes the alkaloid known as *beberine*. When properly administered this generally cures intermittents when quinine has failed, and seems not to affect the head nor to produce its effects by counter morbid action, as the alkaloids of cinchona are supposed to do. The bark has little or no pungency or acrimony, but a strong, persistent bitter taste, with considerable astringency.

An undetermined species of Nectandra of Bolivia yields a bark known as Coto, or Paracoto, which is an efficient remedy in cholera morbus, diarrhœa, acute or chronic dysentery, and colic.

The bitter bark of *Picrasma ailanthoides*, Planch., has been experimented on in Japan, and found to yield *quassin*.

The bark of *Pistacia vera* is employed in India as a tonic in indigestion.

The bark of *Pogonopus febrifugus*, Benth. & Hooker, passing in South America under the names of "Quina morada" and "Cascarilla," has been credited with many of the therapeutic characters of cinchona.

The bark of *Pinckneya pubens*, Michx., known as Georgia bark, is extremely bitter, and has been employed in the treatment of intermittent fevers, being closely related to the cinchonas.

The bark of the white poplar or American aspen (*Populus tremuloides*, Michx.) has bitter tonic principles, and has been used successfully and esteemed a febrifuge in the United States. It contains an active principle, *populin*, analogous to the *salicin* of willow bark.

The winter berry, fever bush, or black alder (*Prinos verticillatus*, Lin.) has been used in the United States as an alterative, tonic, and astringent remedy in diarrhœa, intermittent fever, and other disorders attended with great weakness.

The bark of the choke-cherry (*Prunus virginiana*, Lin.) is tonic, mildly astringent, and anti-periodic.

The bark of the guava (*Psidium guayava*) is used in medicine as an astringent.

The bark of *Quercus tinctoria* is used medicinally as an astringent and tonic. That of *Q. pedunculata*, Ehrh., is given in powder as a febrifuge, and is also much used in medicine for its astringency.

Remijia pedunculata and *R. Purdieana* are said to furnish the Cuprea bark first introduced about ten years ago. They belong to a genus allied to cinchona, and are found to yield 2 to 3 per cent. of the sulphate of quinine. *R. ferruginea* and *R. Vellosii*, Dec., have been substituted for cinchona in Brazil, but they are of inferior quality. Cinchonamine, an alkaloid from *R. Purdieana*, is five times as toxic as quinine.

The bark of *Rhizophora longissima*, a mangrove, yields a species of quinine, and is employed by the natives of the Philippines as a tonic astringent. They mix it with their palm wine to prevent the laxative effects.

The medicinal properties of the various species of willow are more or less alike, being tonic, febrifuge, carminative, and stimulant. Willow bark possessing anti-malarial properties has been used in agues. The bark of *Salix nigra*, Whlbrg., is credited with bitter astringent, antiseptic, detergent, and antiperiodic properties. *S. purpurea*, Lin., is intensely bitter, and, with *S. caprea*, Lin., and several other species, yields medicinal bark. *S. Russelliana*, Smith, yields the largest quantity of the alkaloid *salicin*, an antirheumatic remedy, which is much less liable to excite irritation in the stomach than quinine. *S. saphrioides*, *S. pentandra*, Lin., and *S. fragilis*, Lin., are also rich in salicin. Besides what is made in Britain, some salicin is imported there from the Continent.

The Ceylon bark *Samadera indica*, Gart., is remarkable for its intense bitterness. It is very much richer in quassin than the ordinary commercial quassia. The bark is said to possess properties analogous to those of cinchona; as a substitute for which it has been used. An infusion of this wood may, according to the late Dr. Oondatje of Ceylon, be used at all times as a general tonic, to improve the appetite and invigorate the system, and is a perfect substitute for the infusion of quassia.

The root bark of *Simamba amara*, Hayne, is employed medicinally in dysentery. Its chief use is as a tonic in diarrhœa, but in large doses it is said to cause purging and vomiting.

The bark of Rohun (*Soymida febrifuga*, Juss.), has a bitter and astringent taste, but not nauseous or disagreeable, and may be used in the same way as cinchona. It is a good tonic in intermittent fevers, but if taken in too large quantities it is apt to derange the nervous system, occasioning vertigo and stupor.

The bark of *Stenospermum saveolens*, in decoction, is given as a cooling diuretic and tonic.

The bark and seeds of *Strychnos Nux-vomica* are used in medicine as a nervine tonic, and the bark of *S. pseudo-quina* in Brazil for intermittent fevers.

The bark of the mahogany tree has been used in the West Indies as a substitute for cinchona, but is much inferior to it. The bark of the French African species (*Swietenia Senegalensis*, Desv.) has a great local reputation as a febrifuge. It contains in small proportion a resinous, intensely bitter substance which possesses tonic properties, but a tincture, wine, or syrup of the bark would be preferable.

The bark of *Terminalia arjuna*, Wight, is astringent and febrifuge, and is held in great repute among the natives of India as a tonic and in heart diseases.

The bark of *Thevetia neriifolio*, Juss., is bitter, cathartic, and a powerful febrifuge. But in large doses it acts as an acrid purgative, emetic and poisonous.

The bark of *Ticorea febrifuga*, St. Hil., a Brazilian tree, is intensely bitter, astringent, and febrifugal, as its specific name indicates.

The bark of the hemlock spruce (*Tsuga canadensis*, Carriere) is astringent and tonic, and has been found useful in chronic diarrhœa.

The inner bark of the slippery elm (*Ulmus fulva*, Michx.) is employed in medicine as a mild astringent tonic. In North American practice it has been recommended in diarrhœa and dysentery.

The bark of the high cranberry (*Viburnum opulus*, Lin.), popularly known as "cramp bark," is tonic, antispasmodic, and alterative. That of *Viburnum prunifolium*, Lin., is nervine, antispasmodic, tonic, and astringent. It is an excellent remedy in colic and cramp.

Wrightia antidysenterica, R. Rr., furnishes the Conessi bark of the materia medica, which is astringent and febrifugal. It is reputed to be a specific in dysentery and other bowel complaints.

Both the bark and wood of *Xanthorhiza apiifolia*, L'Hirst., are very bitter and serve as a pure tonic stomachic.

The bark of *Xanthoxylum americanum*, Miller, is very hot and aromatic, and is used medicinally as a stimulant tonic, carminative, etc. So is that of *Z. carolinianum*, Lam.

The tincture of the bark of *Xanthoxylum fraxineum*, Willd., is a powerful febrifuge. It resembles guaiacum in its stimulant action, but is more permanent. A decoction of the bark is in great repute in America as a remedy in chronic rheumatism.

Xylopia glabra, of Jamaica, is one of the bitter woods. All parts of the tree are aromatic and have an agreeable bitter taste. A decoction of the wood and bark is said to have been given with success in colic cases for the purpose of creating appetite.

Among other barks which have medicinal tonic properties may be named that of *Chickrassia tabularis*, A. de Jus., powerfully astringent without bitterness, and that of *Briedelia spinosa*, Willd., which is a powerful astringent.

THE CLOVE INDUSTRY OF ZANZIBAR.

An account of the agricultural resources of the island of Zanzibar was given in the *Kew Bulletin* for April, 1892, p. 87, and reference was made to a report on the same subject prepared by Sir Gerald Porter and issued by the Foreign Office (Annual Series, 1892, No. 982). Another report has now been issued by the Foreign Office on the "Spice and Other Cultivation of Zanzibar and Pemba Islands," prepared for Sir Gerald Porter by Mr. FitzGerald, a specialist on tropical agriculture in the employment of the Imperial British East Africa Company.* From this latter report the following extract is taken respecting the clove industry of Zanzibar and Pemba.

The clove is undoubtedly the principal and most important cultivation of Zanzibar, and grown wherever the soil is suitable, from the large and extensive plantations belonging to the Sultan and his family to the few trees owned by the more humble cultivator.

The soil of Zanzibar, with the exception, however, of that of Pemba, which excels it in this respect, is certainly eminently adapted for this cultivation. The soil most suitable for clove cultivation is "a dark loam, having underneath a layer of dusky yellow earth, intermixed with gravel;" also "a yellowish or reddish stiff clay;" and these typical soils are all found on the island. The clove tree requires clay, and I observed there was always a marked difference in appearance between trees growing on a clay soil—red for preference—and those found on a lighter ground; and the finest trees were always either growing on red clay, or else a stiff dark red to darker chocolate soil.

The clove tree (*Caryophyllus aromaticus*) is a native of the Moluccas, and was introduced into Mauritius in 1770 by the French, and at the end of the century an Arab, by name Harameli-bin-Saleh, accompanied a French officer from Zanzibar to Bourbon and obtained permission to take back a small quantity of seeds and plants with him. This was the commencement of clove cultivation in Zanzibar, Harameli making the first plantation at Mitoni, on the road to Chueni; and the cultivation rapidly spread. The different methods by which this cultivation is now carried on are evidently borrowed from the French, and the Swahili word for clove, "garafu," is probably a corruption of the French word "giroflier."

Nurseries.—The seeds are first soaked in water for three days, and when germination has set in they are planted out 6 inches apart, with the bud end above ground, into shaded beds—the usual practice being to put down two seeds together in case of failure [to guard against failure]. If a large number of plants are to be grown, the seeds are only put down 3 inches to 4 inches apart.

Beds are about 6 feet wide, and of any length. They are shaded by a flat framework of sticks, over which is placed a layer of either dry grass or cocoanut leaves; the height of this framework is about 3 feet to 3½ feet.

There is no regular rule for watering the seedlings, the important point being to keep the beds constantly damp. The slaves in charge go over the nursery beds both morning and evening, watering any of which the surface has become dry, the practice being to sprinkle water with the hand from the water jar. The plants are kept, on an average, from nine months to one year in shaded beds. When the plants are about 6 inches high they are by degrees hardened by the thatch of the framework being gradually removed, and they are then left in the open beds freely exposed to sunshine for the space of one month or two months before planting out.

Planting.—The usual planting distances appear to vary, and no regular or fixed rules appear to exist.

The most customary, as given to me by Ragu, the head overseer of the Sultan's plantations, is 24 feet apart, but also in small plantations it is 18 feet, rising in larger ones to 36 feet.

Lining is done by rope, but no pegs are used, the distances being marked by a cut with the hoe. This work is very carefully carried out, and the appearance of the majority of plantations is very striking in this respect, whichever way one looks the trees presenting an unbroken and uniform straight line.

The process of holing is as follows: A large circular sloping hole, 4 feet in diameter, is cut, in the centre of which is cut a smaller hole, 1 foot by 1 foot or 9 inches wide; this smaller hole receives the plant; the wide upper portion remains unfilled, and serves as a catch drain or reservoir. This is in process of time gradually filled up by weeds, fallen leaves, etc.

Special care is also taken in planting out. The earth round the plant is loosened by a peculiar triangular-shaped spade used especially on clove plantations, and called "moaa," and in use in Zanzibar, as well as the ordinary native "jembe," or hoe, already referred to. The plant is then carefully lifted out by the hand with as much earth adhering to the roots as possible, and placed upon two strips of banana fibre previously placed crosswise upon the ground. (Each strip of fibre is about 3 inches to 4 inches wide, by 1½ feet to 2 feet in length.) The four ends are then taken up and wrapped round the plant and firmly tied together. The plant is then carried to its destination, the strips of fibre effectually keeping the earth in position. Before planting, the pieces of fibre passing beneath are cut at each corner, and the plant finally placed in the hole prepared for it, and the earth heaped round; the four ends of the fibre left at the sides are then removed one by one, the bottom portion being cut through enabling this to be done with ease. If the weather is hot, or in the event of drought, the young plant is watered in the evening daily, and watering is continued as required until the plant attains the height of 18 inches, or, roughly speaking, during the space of one year. The young plants are not shaded in any way after planting.

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* Foreign Office, 1892, Miscellaneous Series, No. 266, Zanzibar.

Age of Trees.—There are some trees now growing on the island which are said to be nearly 90 years of age, but the average length of life of the clove tree in Zanzibar appears to be from 60 years to 70 years, and I have this on the authority of Mahomed-bin-Saif Drumiki, an elderly Arab of much experience, and who has been for over 20 years in charge of the Sultan's plantation at Indo. Such terrible devastation resulted from the great hurricane of 1872, when nearly all the clove plantations on the island were destroyed, that the average age of the trees now growing may be put down as below 20 years, and the age of the trees in the Sultan's plantation, the largest in the island, is from 16 years to 17 years.

The appearance of the clove plantations is, as a rule, most healthy and luxuriant, the height of the more matured trees averaging fully 40 feet, and the branches of the two rows often completely shading the ground. Clove trees generally have forked stems, and often as many as three and four. A single-boled tree is rare.

Diseases and Enemies.—So far as I have been able to ascertain, and I have made careful inquiries on this subject, the clove tree is not subject to any fungoid disease, and the percentage of dead, dying, and unhealthy trees noticed by me was very small, and the cause generally was either a damp situation or else want of cultivation.

The clove tree, however, suffers from the attacks of two enemies: one a caterpillar, which attacks the foliage in the dry weather and often denudes the tree of its leaves, but the tree recovers at once as soon as the rains set in; the other is the white ant, which occasionlly attacks the roots. No remedial measures appear to be taken.

Time of Bearing.—Clove trees begin to yield, in good situations, 5 years from planting; in inferior soil, 6 years to 6½ years from planting.

Mohamed-bin-Saif, the overseer of Indo, informed me that he remembered trees destroyed by the hurricane of 1872, which singly yielded 5 frasilas each (175 lbs).* Also the head overseer of the Sultan's plantations has furnished me with the following averages: three trees will yield 2 frasilas; 4,000 trees, 50 frasilas.

Time of Gathering.—The picking of the buds commences in August and lasts for four months, and on an average each tree is picked three times in a season. The unexpanded buds on the trees are at first a pinkish yellow, becoming a deeper red as they mature. The stalks and buds are gathered at the same time, and thrown on to grass mats spread on the ground; the picking of the higher branches is done by means of triangular bamboo ladders.

Curing.—Other slaves pick off the buds from the stalks, and they are then spread out to dry in the sun, being taken in every night. The cloves are dried on mats in direct sunlight. The drying is continued for the space of 6 days or one week.

Green cloves dry down to about half their weight; thus 1 frasila green is equal to ½ frasila dry. The color desired in the dry clove is red; and buds of this color are more valued than black.

Cloves are dispatched to Zanzibar in gunny bags. There is a duty due to Government of 25 per cent.; this is paid in kind, and the cloves heaped in bulk in the Government godowns. Public auctions of this are now held by Government every fortnight to allow open competition, and especially to admit European merchants. Zanzibar cloves are very dry, differing much in this respect from the Pemba produce. Zanzibar cloves can be stored for some time, but Pembas are disposed of as early as possible, as otherwise the loss from "shortage" is very great.

A good dry sample of Pemba cloves is smaller and blacker—blacker from having contained much moisture. Zanzibar cloves are larger, and the red appearance of the dried buds is unmistakable, and they are well known as "Zanzibar red-heads."

Shipment.—Cloves are generally exported in double mat-bags ("makanda") in preference to gunnies, though there is more shortage—in fact, the difference is marked; though double, the mat-bags apparently permit a greater absorption of damp. The difference of shortage between Zanzibar and Europe in the weight of the cloves equals 8 per cent. The difference between Zanzibar and Pemba cloves is well recognized in Europe, but large shipments of both varieties are also made to Bombay, where they are very probably mixed. Also large exports of clove-stalks are made to both Bombay and New York.

The exports of cloves from Zanzibar and Pemba for 1890–91 were as follows: 1890, 17,881,850 pounds avoir.; 1891, 13,615,105 pounds avoir.

At the present time Zanzibar unfortunately holds the lowest position in the London market as regards prices. I annex quotations of sales from the London produce-market reports of May 13, 1892: "77 packages Amboyna at 3⅜*d.* to 3½*d.* 388 bales Zanzibar (part sold) at 2⅝*d.* to 2¾*d.* Most of the 38 cases Penang sold privately, with a few lots in sale at 1*s.* to 1*s.* 0¾*d.*" —*Kew Bulletin.*

INSOLUBLE TABLOIDS.

A typhoid fever patient has been taking tabloids of quinine—2 grains in each—three times a day at first, and lately four times. Three days ago I discovered in one stool two tabloids—whole, but slightly enlarged—and I have found one and pieces of others each day since. This is the seventeenth day, as far as the data of motion can be fixed, and there has been no diarrhœa, the bowels having acted once each day after an enema. —William G. Groves in *London Lancet*, March 4, 1893.

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* One frasila = 35 lbs.

Solid Brilliantine.

A good solid brilliantine is obtained as follows:

	Parts.
Olive oil	1000
Spermaceti	300
Oil bergamot	25
Oil clove	2
Oil rose-geranium	10

The olive oil and spermaceti are heated and thoroughly mixed, the mixture is then removed from the fire, and just before it begins to set the essential oils are added.

Gombault's Caustic Balsam.

The following is said to be the formula:

	Parts.
Sulphurated oil	2100
Oil turpentine	340
Camphor	20
Alcohol	30
Sulphuric acid	90
Oil of red thyme	3
Oil of rosemary	10
Oil of amber	8

Mix, and allow to stand until a clear liquid is obtained. Decant.

Clark's Blood Mixture.

	Parts, by weight.
Potassium iodide	40
Chloroform	8
Alcohol	150
Solution caustic potash	5
Water	2250
Caramel	50

Chilblain Tablet.

℞	Oil cajeput	1 part.
	Resin	1 "
	Camphor	1 "
	Elemi	1 "
	White wax	2½ parts.
	Benzoinated lard	3 "
	Almond oil	3 fluid parts.

Add the resin to the oil of cajeput, and warm gently until dissolved. Melt the wax, lard, and oil, add the elemi and the cajeput solution, strain, and lastly add the camphor. If too soft, increase the proportion of the resin and wax.

Salol Collodion for Rheumatism.

The *Therapeutic Gazette* gives the following formula which gives rapid relief in acute rheumatism of the joints:

Salol	4.0
Ether	4.0
Collodion	30.0

Diphtheria Preventive.

Dr. J. Lewis Smith claims that diphtheria is prevented, in a measure, from spreading, by keeping a quart of water, containing two teaspoonfuls of the following solution, simmering on the stove of the sick-room:

Carbolic acid Oil eucalyptus	āā	1 ounce.
Oil turpentine		8 ounces.

Gold Indelible Ink.

This is composed of two liquids kept in separate bottles:

		Parts.
No. 1.	Chloride of gold and sodium	1
	Water	10
	Gum	2

		Parts.
No. 2.	Oxalic acid	1
	Water	5
	Gum	2

The cloth or stuff to be marked should be written on with liquid No. 2. Let dry, and then write upon the prepared place with liquid No. 1, using a quill pen. Pass a hot iron over the mark, pressing heavily.

Curacao Liquor.

The *Registered Pharmacist* gives the following formula:

Curaçao orange peel	3 kilogrammes.
Orange peel	500 grammes.
(Remove the inner peel.)	
Orange flowers	200 grammes.
Cloves	10 grammes.
Ceylon cinnamon	10 grammes.
Bitter almond	25 grammes.
Alcohol, 60-per-cent	30 liters.

Macerate all together, then place in a retort, and continue the distillation until the distillate measures 20 liters; add to this:

Raspberry water	10 liters.
Sugar	50 kilogrammes.

And dissolve by agitation without heat.

Purgative for Children.

Castor oil	4 fluidrachms.
Infusion of coffee	2 fluidounces.
Sugar	6 drachms.
Yolk of egg	1

Make an emulsion.

Concentrated Solution of Corrosive Sublimate.

In making solutions of mercuric chloride for surgeon's use, it will be found a great convenience to have in stock the following concentrated solution:

	Parts.
Bichloride of mercury	1
Acetic acid	5
Water	q. s. to make 100

Mix and dissolve.

This solution, even when exposed to the direct sunlight, does not deposit calomel.

Spray for the Sick-room.

The following may be used as a refreshing and purifying spray for sick-rooms or, in fact, for all living apartments:

	Parts, by weight.
Fir-wood oil	70
Oil juniper-berries	8
Oil rosemary	5
Oil lavender	2
Oil bergamot	1
Oil lemon	2
Alcohol	1500

Macerate the above with 200 parts of fresh pine-tops, and distil carefully.

Tonic Hair-Wash.

Good results have been obtained by applying the following liquid:

Borax	1 drachm.
Salicylic acid	20 grains.
Tinct. cantharides	½ fluidounce.
Bay rum	2½ fluidounces.
Rose-water	2½ fluidounces.
Water	5 fluidounces.

Dissolve the borax and the acid in the water by the aid of heat; after it is cold, add the remaining liquids.

Solution of Albuminate of Iron.

Dietrich's formula is as follows:

Mix solution of chloride of iron 120 parts, with distilled water 4,000 parts; and dissolve dried egg albumin 30 parts, in distilled water 4,000 parts. Mix, and neutralize with solution of soda diluted with five times its bulk of water. Wash the precipitate with distilled water until free from chloride; then drain it on a linen strainer, and dissolve it in solution of soda 183 parts; and finally add alcohol 160 parts, cinnamon water 70 parts, and distilled water q. s. to make 1000 parts.

This contains about 4 parts of iron in 1000 parts of solution.

Stomach-Drops (Magen-Tropfen).

This is an old and popular German domestic remedy of the following composition:

	Parts.
Wormwood	2
Zedoary	2
Galangal	4
Orange peel	4
Red Saunders	1
Quassia	1
Alcohol Water	q. s. to make 750

Prepare by percolation.

Phenosalyl.

Phenosalyl consists of:

	Parts.
Lactic acid	31
Salicylic acid	15
Menthol	1½
Carbolic acid	140

The three acids are melted, and the menthol added.

Phenosalyl is very soluble in glycerin; it dissolves in water in the proportion of four to one hundred. It is used as a disinfectant.

General Tonic.

A general tonic, to fix up a shattered system and restore the perverted functions to a state of normal action, is the following:

Sulphate strychnine	2 grains.
Dil. phosphoric acid	2 fluidounces.
Comp. tinct. cinchona	4 fluidrachms.

Dose: Twelve drops in water after meals.

Toilet-Vinegar.

Oil lavender	5 minims.
Oil rosemary	5 minims.
Oil peppermint	4 minims.
Oil lemon	10 minims.
Oil cloves	6 minims.
Bals. Peru	1 drachm.
Rectified spirit	4 fluidounces.
Acetic acid	3½ fluidounces.
Water.............q. s. to make	20 fluidounces.

Mix the oils and balsam with the spirit, and add to the acid and water. Let it stand for two or three days, shake occasionally, and filter.

Menthol Mouth-Wash.

Menthol	40 grains.
Oil clove Oil peppermint āā	1½ fluidrachms.
Boric acid	9 drachms.
Tinct. myrrh.	4½ fluidounces.
Tinct. cudbear	2 fluidounces or q s.
Alcohol...........q. s. to make	36 fluidounces.

Dissolve the menthol and boric acid in 20 fluidounces of alcohol, add the oils and tinctures, filter, and add enough alcohol to make 36 fluidounces.

Pasta Mack.

This is a bath-soap, and is to be added to the bath in the proportion of a heaping teaspoonful to each 10 gallons of water:

Bicarbonate of soda	5 ounces.
Tartaric acid.	4 ounces.
Powd. starch	7 ounces.

Make into a stiff paste with:

Oil almonds	3 fluidounces.

Perfume with:

Otto of rose	5 minims.
Oil of clove	2 minims.

Treatment of Sweating Hands and Feet.

The *Journal de Médecine* gives the following:

1. ℞ Tinct. belladonna	1 drachm.
Cologne water	1 ounce.

M. Add a little glycerin at the moment of using, and with the mixture rub the hands strongly. The hands should be first washed in soft water and thoroughly dried.

2. *For the Feet:*

Fat soap	15 ounces.
Tannin	1 ounce.
Starch	q. s.

Melt the soap in a water bath, and add the tannin; mix thoroughly, and then stir in enough starch to make the mass friable.

PARIS LETTER.

A New Instrument for Injecting Organic Liquids—Purification of Vaccine—Stability of Corrosive-Sublimate Powders—"Triocanthine" Again Exploded—American Pepsin Abroad—Light on Triturates in Order—Prizes to Pharmacists by the Academy of Medicine.

M. Vigier lately described to the Société Thérapeutique the new aseptic hypodermic tubes originated by Dr. Barthélemy, which have been especially in vogue since the new fad arose of injecting organic liquids. The new tubes are available, however, for all sorts of hypodermatic injections. They have the advantage of including the medicament and the syringe in a single apparatus. The tubes, which are of glass, are sterilized, and are then filled with the desired liquid, which is also sterilized. Each tube is provided with a fixed needle which, at the moment of using, is passed through a flame. Above the needle is a reservoir which will contain a measured dose of one cubic centimeter of liquid. The liquid is held, sealed, in a tapering glass tube just above the reservoir. When the point of this tube is broken off, the liquid runs into the reservoir, whence it is injected by means of a pear-shaped rubber cap placed on the top of the main tube. Large-sized tubes are made for organic liquids. Doctors find this apparatus much more convenient than the ordinary Pravaz syringe, which is hard to prepare and to cleanse. I may add that the introduction of organic brain and testicular fluids is aiding general practice. The sad wrecks of Parisian "pleasures" think there is salvation in them.

Serious complaints having been made concerning impure vaccines, as used against variola, Messrs. Saint-Yves and Chambon entered upon a series of researches with the object of finding a pure and stable preparation of vaccine. In a recent report to the Académie de Médecine they recommended that the virus be dissolved in glycerin, and kept from forty-five to sixty days before using. By this simple means, they say, an irreproachable product may be obtained, whose action is fully up to the required standard of strength, while giving rise to no untoward symptoms. It appears that the prolonged contact of the virus with glycerin has the effect of killing off the "undesirable microbes." The preparation is kept in sealed, sterilized tubes.

Preparations of the authorized corrosive-sublimate powders, as used by midwives and for general disinfecting purposes, have given some trouble, owing to their being hygroscopic and otherwise unstable. The formula is:

Corrosive sublimate....	0 25 gramme.
Tartaric acid..................	1 gramme.
Alcoholized solution of carmine-indigo (5-per-cent.)...........	1 drop.

On investigation, M. Yvon says that, properly prepared, the powder is quite stable. Care must be taken to use pure and thoroughly dried tartaric acid, and to mix the ingredients in a perfectly dry mortar. After the colorant is added, the moisture must be completely evaporated before the powders are divided, and the mixture must be kept from the air and light.

Messrs. Heckel and Schlagdenhauffen (*Répert. de Pharm.*, Jan. 10th) present a very full report of their researches on *Gleditschia tricanthos*, a plant which has a special historical interest for Americans from the fact that it was once stated by an American to be the source of his alleged alkaloid "triocanthine," the would-be rival of cocaine. The summary quashing of this remarkable fraud by the prompt action of Messrs. Parke, Davis & Co's. analysts is well known to our readers. The matter is here referred to in order to place on record the fact that the authors of the present paper say (page 5): "The results of our researches are identical with those of Messrs. Parke, Davis & Co." Dr. Novy, by the way, has been making a new analysis of one of his samples of "triocanthine." He says that it contains 6 per cent. of hydrochlorate of cocaine, 5 per cent. of atropine, and enough of salicylic acid to insure its conservation.

M. Portes, a very able man and one of the best of the French pharmacists, has just published a long article on pepsins—French and foreign. From such a source we would naturally expect some good points, but in reality the article is one of those which induce a man to turn back to the title-page of the journal in order to assure himself that he has not, by chance, picked up a paper of twenty years ago. M. Portes says: "We cannot easily understand why the French pharmacist should prefer foreign pepsins to those of the French Codex." Under these circumstances the obvious way to settle the point would be to ask them their reasons. The real truth is, that despite the duty, freight, etc., on foreign drugs, the French pharmacist finds that American pepsin is the best because it is the most active and the most stable.

It seems strange to Americans that French pharmacists do not yet appreciate the value of triturates. M. Pouchet said the other day: "It is not certain that granules contain the quantity of medicament intended; however carefully prepared, it is almost impossible to mix an active principle evenly through a mass." It is to be hoped that some reputable American drug-firm may expose a triturate-mixer at our coming World's Fair.

Several of the prizes of the Académie de Médecine, at its last award, have fallen to pharmacists. Berlioz and Ruault received 500 francs for their labors on the application of sulphoricinate of soda to the treatment of diphtheria. Prizes for the examination of mineral waters were given to several pharmacists, and some were rewarded for their services in analyzing milk. Others received recognition for their statement of important points in public hygiene. These prizes are justly coveted by pharmacists, who regard them as important honors which they work hard to obtain. The effect of these awards is excellent, and we only wish that some such incentive could be offered to our own colleagues of the United States.

LONDON LETTER.

The Latest Development of the Aconite Research—The Abandonment of Sublimate in Surgery: Lister Recants—Microscopical Section-Staining: Improved Formulæ—A Physiological Styptic—The Sale of Poisonous Proprietary Medicines: the Triumph of the Pharmacist.

The Research Laboratory, of which so much has been heard at various times, counts among the *pieces de resistance* upon its list of work an investigation of the alkaloids of aconite root. This investigation has been going on since the establishment of the Laboratory, and a number of papers have been read—mostly before the Chemical Society—detailing the results attained. Perhaps it is not quite fair to criticise the work before it is finished, but one cannot help feeling that, so far, the labors of Prof. Dunstan and his various colleagues have not added any very remarkable discoveries to our knowledge of the chemistry of aconite.

The difficulty that presents itself in the estimation of the value of such work as this, seems to depend upon the unsatisfactory condition of the chemistry of alkaloids generally as we know it. The investigators at Bloomsbury Square prepare elaborate reports containing details of methods of purification, formulæ, etc., which seem quite convincing till one comes across papers by other chemists apparently equally skilled and painstaking who arrived at different results.

One result of the research which has been going on so long here was to show, according to the workers, that "napelline" so-called is a mixture; in an earlier stage of the work, a formula was given for aconitine as follows: $C_{33}H_{45}NO_{12}$, with a melting-point at 188° C. Now these results are brought into question by the work of Messrs. Ehrenberg and Purfuerst, who give the formula of aconite as $C_{32}H_{43}NO_{11}$, and the melting-point as between 193° and 194° C. They add that the melting-point may be lowered ten degrees or more by the presence of a very small quantity of a decomposition product which coats the crystals like a varnish. Further, they believe napelline to be derived from aconitine through picraconitine.

According to the latest paper read before the Chemical Society (by Prof. Dunstan, who was assisted by E. F. Harrison), aconite contains an alkaloid isomeric with aconitine, which is one of the first bases extracted from the root; this alkaloid the authors call "napelline." It is non-toxic and does not produce any tingling sensation on the tongue. When heated in closed tubes with acid or water, it yields aconine and benzoic acid like aconitine.

Probably no fact in connection with bacteriology has been more assiduously instilled into the minds of medical students (and pharmaceutical too, for that matter) than the surpassingly powerful antiseptic properties of solutions of corrosive sublimate. Although the disadvantages of mercuric chloride, owing to its corrosive and poisonous nature, have been generally recognized, no doubt—save indeed by the very heterodox—has been cherished as to the efficacy of the germicidal action of the compound.

As a matter of fact it would seem that Koch—to whose experiments and statements the booming of sublimate was largely due—exaggerated the value of the antiseptic or overlooked the differences which must be reckoned with between laboratory experiments and clinical experience. Undoubtedly the coagulating power of mercuric chloride is practically a serious hindrance to its usefulness.

These reflections lead up to the announcement—and startling enough it proved in English medical circles—of Sir Joseph Lister, that he has entirely abandoned the use of sublimate in favor of carbolic acid. He characterizes a 5-per-cent. solution as "more trustworthy as a germicide for surgical purposes than corrosive sublimate, and in other respects greatly to be preferred." A great advantage of phenol seems to be that it "has a powerful affinity for the epidermis, penetrating deeply into its substances and mixing with fatty materials in any proportion."

Looked at broadly, this expression of opinion by our most eminent apostle of antisepsis may be taken as indicative of the gradual revolution (or evolution) which is taking place in surgery. The use of antiseptics has evidently reached its zenith, and now reaction is setting in towards asepsis, the aim of which is rather to prevent the access of pathogenic micro-organisms that to attempt to destroy them *in situ*.

The meeting of the Pharmaceutical Society this month was occupied with a lecture on "Section-staining," by P. W. Squire, illustrated by images of actual sections thrown on a screen by the lantern microscope. The lecturer drew attention in the earlier part of his remarks to the extraordinary and impossible formulæ which have passed through the text-books, owing evidently to the weakness of microscopists in chemistry. He also gave formulæ for the various reagents devised on a more scientific basis and which had stood the test of experience. The two following may be usefully quoted:

Kleinenberg's Solution.

Hæmatoxylin	2½ grammes.
Calcium chloride, cryst.	20 grammes.
Alum.	3 grammes.
Rectified spirit	240 c. c.
Distilled water	26 c. c.

The calcium chloride is dissolved in 10 c. c. of the distilled water, and the alum in the remainder by the aid of heat; the solutions are mixed and immediately diluted with the spirit. After an hour the mixture is filtered and the hæmatoxylin added.

Schulze's Solution.

Zinc chloride solution (s. g. 1.85),	70 c. c.
Potassium iodide	10 grammes.
Iodine	1 decigramme.

This solution can be used only as a reagent, and not as a dye. Structures stained with it cannot be mounted in any of the ordinary media. Cellulose can, however, be permanently stained by carmine, hæmatoxylin, nigrosin, methylene blue, safranine, and fuchsin.

During the past two years our knowledge of the nature of coagulation has been greatly widened and placed upon a scientific basis by careful and systematic research. One result of this advance has been that it suggested the possibility of discovering a physiological styptic which, having an elective influence on the blood, would be inert in respect to the tissues, and hence painless in application.

Investigations conducted on these lines led Dr. A. E. Wright, Professor of Pathology in the Army Medical School, Netley, to the preparation of a physiological styptic which in brief is an extract of the pulped thymus gland of the calf with a 1- to 2-per-mille solution of carbonate of soda containing also a ½-per-cent. solution of chloroform. After extracting for two or three days, with thorough stirring at intervals, the entire substance of the gland dissolves; the product is strained through calico acidified with dilute hydrochloric acid, and mixed with 1 per cent. of calcium chloride. The slight alkaline reaction is restored by cautious addition of weak soda.

In stoppered bottles (or otherwise if the evaporation of the chloroform be prevented) the solution keeps indefinitely.

The styptic may be applied on a tampon to any bleeding surface where strict asepsis can be dispensed with. In spite of the fact that, according to the author, the preparation has very powerful styptic properties, the fact that it cannot be sterilized (by heat) without great loss of coagulating power does not seem to promise well for the future of this physiological styptic. It will be interesting to learn what experience other observers have with the extract.

The poisonous-proprietary-medicine question, referred to in a recent letter, has reached another stage this month. It will be remembered that the point at issue was whether everyone had the right to sell proprietary medicines containing poison—by virtue of the Government stamp they carry, which was believed to exempt them from the restrictions of the Poisons law—or whether such sale should be exclusively in the hands of the qualified chemist and druggist. A High Court decision has now been obtained which establishes definitely—unless the defendants take the case to the Court of Appeal, which is not considered likely—the exclusive right of chemists to the sale of proprietary medicines containing poisons.

This decision seems to be regarded as satisfactory, not only by the medical world but by the public at large. Naturally the organs of the grocers protest against it—as the so-called "patent" medicine business was one of the characteristic branches of their trade. Of cousre they do not show their hand in dealing with the question, but lay stress upon the "inconvenience which will be entailed upon the public" as the most unfortunate effect of the decision.

The lesson to be gathered by the pharmacist from this case and its result is the oft-repeated importance of taking his stand upon his position as a qualified retailer of poisons and insisting upon the recognition of his exclusive right to deal in these substances. It is primarily to safeguard the public in respect to the distribution of poisons that the chemist is required to undergo a special course of training and to pass special examinations, and hence it is incumbent upon him to make every effort to see that his peculiar responsibility is properly understood and appreciated.

BERLIN LETTER.

The Latest Synthetical Candidates for Medical Favor—The Pharmacist's Widow and the Antidiphtheritic—Extr. Teucrii Scordii as an Antiseptic—The Fruit of Arachis Hypogæa as a Food—The Preparation of Fluid Extracts—Permanent Physostigmine Solutions.

The stream of new remedies flows on, apparently too fast for the therapeutical investigator to grapple with. Salicylacetic acid is prepared from the sodium salt obtained by the interaction of dry sodium salicylate, soda lye (40-per-cent.), and monochloracetate of sodium. When pure it melts at 188° and crystallizes from water in lustrous scales; the compound is said to possess striking antiseptic properties. Then under the name chloralose a new hypnotic has been introduced into materia medica; it is a product of the combination of chloral and glucose. The hypnotic action of chloralose is greater than that of chloral. Coryl is a mixture of methyl chloride and ethyl chloride; it is liquid at 0° C., while methyl chloride boils at —27° C. Only these bare facts are, however, to be learned at present about these new-comers, and the possibility is by no means remote that among such a crowd of substances a good proportion will altogether fail to secure adequate attention to decide their merits.

Some amount of mild excitement has been aroused by certain investigations of a secret remedy for diphtheria said to be prepared by a pharmacist's widow in Munich. The remedy had achieved such a reputation for reliability that the suggestion was made that the secret should be purchased by the State. Then Dr. Krüche stated that he had analyzed the preparation and found the chief constituent to be the leaves of *Vinca minor* (also known as the lesser periwinkle), which contained a cardiac tonic and a principle which exerted a solvent and disintegrating effect upon the diphtheritic membranes. The extract, said this writer, must be always freshly prepared, but it does not retain its activity more than a day.

The public had hardly time to congratulate itself upon so ready a solution of the problem when Drs. Bender and Hobein claimed that, from an analysis carried out by them three years before, they had concluded the remedy to be chloride of potassium, honey, and the juice of *Sempervivum tectorum.*

If the reader be astonished at the skill of the chemists who detected such drugs in fluid mixtures, the explanation may be given that the recognition in each case was based upon the microscopical examination of particles of vegetable matter floating in the unfiltered liquid. Dr. Krüche found the laticiferous vessels of *Vinca*, and the other two investigators characteristic stomata. The conclusion to be drawn from the variant results of the investigators may be that the preparation has varied in composition, and at any rate the affair has given it a valuable "boom."

Prof. v. Mosetig-Moorhof, to whom is due the introduction of iodoform into surgery, made a communication a few days ago on a new method of treating mycotic diseases by teucrin. Teucrin is an extract of the plant *Teucrium Scordium* (the water germander), a member of the Labiate family, to which from the earliest times antidotal and antiseptic virtues have been ascribed. The preparation is made by extracting the plant (not too old) by means of hot distilled water, concentrating the expressed liquid to the consistence of honey, repeatedly purifying by alcohol, and evaporating the clarified liquid to sp. gr. 1.15. The product is filled into glass phials of about one drachm capacity, sterilized, and hermetically sealed up.

Teucrin is a dark brown liquid with a herb-like odor and a pungent taste; it reddens blue litmus-paper. The dry residue amounts to 20.8 per cent., and the ash to 4.6 per cent.

The rationale of the employment of teucrin is based upon the observation that local affections due to bacterial invasion are beneficially influenced by stimulation of the circulation and production of an active hyperæmia. After long search, Prof. Mosetig believes that he has found in the extract of *Teucrium Scordium* a remedy which will bring about the desired "affluxus sanguinis auctus," without any dangerous by-effects.

During some five years the author has successfully used the extract by subcutaneous injection (40 minims each time), especially in fungous local diseases and indolent abscesses. The high reputation of Prof. Mosetig will probably ensure the careful and systematic repetition of his experiments, with results that cannot fail to be interesting.

The tendency of the times is not towards simplicity of living, but since side by side with the advance of civilization there seems to be always a proportion of more or less pronounced poverty, foods which afford a maximum of nutriment in a cheap and fairly readily assimilable form are worthy of note. Pea-nut meal has, further, a more purely medicinal interest in that it promises to form a suitable article of diet for the corpulent, for diabetics, and for subjects of Bright's disease.

Arachis hypogæa, of the Papilionaceæ, has been an object of cultivation from very early times. The fruit is regarded as a favorite food and luxury in Central Africa, the East Indies, and the Southern States of North America. As known, the plant has the peculiarity of ripening its fruits under the earth; these when raw have a taste reminding of beans, but when roasted more closely resemble almonds and nuts. The proportion of albumin present is very high (47 per cent.), being practically double that of the Leguminosæ (23–26 per cent.).

The high nutritive value indicated by the composition of the fruit led to its trial in the form of a coarse meal for a large number of patients in the Friedrichshain Hospital of this city. The dried material proved unsuitable as a nutrient, but the meal could be cooked into a kind of porridge resembling that yielded by oatmeal. The quantity of 1–1½ ounces, sufficient for a plateful of the "bouillon," contained about half an ounce of albumin, equal approximately to 3½ ounces of meat, two eggs, or half a pint of milk; the cost of the vegetable food was, however, less than a farthing.

Out of 120 men, women, and children to whom the bouillon was given, half liked it and took it for weeks without unpleasant effects; these patients included some dyspeptics and others suffering from intestinal diseases. Of the remaining half, the majority considered the food tolerable, and only twelve characterized it as nasty and disagreeable.

Experiments made to determine how far the albumin of the "nuts" was made use of by the body, showed that the dried preparation passed through almost unchanged, but when the cooked was taken the excrement was almost entirely free from albumin, showing that practically the whole of that consumed was absorbed.

In a recent communication on Fluid Extracts, L. Dryon points out that in the pharmacopœial methods too much attention is given to the keeping qualities of the product and too little to the solubility of the active constituents of the drugs treated. In some cases again, as in that of our own Pharmacopœia (ed. iii), the chief aim seems to be the simplification of the *modus procendi*, all drugs being ordered to be extracted with alcohol or with alcohol and glycerin.

From a number of experiments made on rhubarb and cinchona bark, Dryon recommends that the drug should be extracted with alcohol of sp. gr. 0.8276, the alcohol distilled off, and, after evaporating the extract to three-fifths the weight of the drug worked upon, two-fifths of alcohol be added to make up the product to 1:1 strength. For aqueous extracts the proportion of added alcohol recommended is one-tenth, the product being made up to the weight of the drug taken.

Experience has taught us that neutral physostigmine solutions assume a ruby-red color when kept for long. This change is believed to be due to the alkalinity of the glass vessels in which the solution is stocked, the immediate cause of the redness being the formation of rubro-eserin by oxidation. Now rubro-eserin not only is destitute of the characteristic action of physostigmine, but also has strongly irritant properties. Under the action of heat the solutions undergo this change in a few minutes. The observation that even weak acids prevent this decomposition has led to the suggestion that the solutions should be prepared with carbonated water, and then preserved in hermetically sealed tubes. Before the tubes are sealed up, the excess of gas is driven off. Sterilization is effected by heating to 100° C. If the tubes be U-shaped and drawn to a point at one end, they may of course be used as dropping-glasses.

NEW YORK LETTER.

Since my last report, business has been as active in wholesale circles as the condition of affairs could possibly warrant. Our very severe winter, and the heavy roads created throughout the country because of the heavy snow-falls, have made it almost impossible for roading to be accomplished. For that reason orders have been but limited, but on the whole satisfactory business has been realized. We can hardly expect much for the month of March, as the breaking up of spring is now about upon us, when the heavy roads that are throughout the country a marked feature of this season of the year will still prevent active business. However, slackness of trade has not had the effect upon prices that might have been anticipated, for there are but few declines to record, whereas a degree of firmness in prices has been realized which proves most encouraging to wholesale dealers.

Opium, it seems, during the first two weeks of February, reached its limit. Since that time there has been a slight decline, and the market is to-day very weak. Orders are correspondingly small, as on a declining market we rarely hear of large deals. Buyers are content to draw from the centre of supplies only sufficient to meet their current wants, in expectation of a still lower range of prices; in which estimate the general impression is that they are not on this occasion liable to be disappointed.

Morphine has ceased to advance, but, owing to the very heavy demand, remains firm at present prices, and we find no disposition on the part of manufacturers or importers to reduce values.

Quinine.—An exceedingly sluggish market has destroyed the courage of holders again, so that the record of the month is entirely against importers, heavy losses having been realized because of the low range of prices. All are now, however, looking forward to the spring demand which the next four weeks must bring upon us; and as most outside cheap parcels have now been cleared from the market, advance in price is most confidently looked for. It is also predicted that the advance will be greater than is generally supposed, as the losses both on the part of manufacturers and dealers at second-hand have been too great to encourage speculation in that direction any further. The bark sales of the past week, furthermore, have not been as encouraging towards higher prices as might be desired, but this is doubtless owing to slack demand on the part of manufacturers.

Cloves.—Most discouraging reports reached this market from the source of supplies during the middle of the month, so that very heavy speculation took place, the price advancing materially. Owing to the lack of full confirmation of these reports, some timidity has been felt on the part of holders, so that there has been a slight reaction, and the buds can be to-day bought at very much lower prices.

Oil of cloves was for the time being affected by this high price of cloves. A desperate effort was made on the part of manufacturers to advance prices, and for a time it seemed that they would succeed. They also, however, have been compelled to yield, and the oil is again at about the old basis of value.

Lupulin.—The Collector of the Port of New York, owing to the fact that lupulin is now so largely used by brewers, has seen fit to hold it for a 10-per-cent. duty. This has been collected on a number of parcels, but in all cases the entries have been protested, and it is exceedingly doubtful whether the Collector will be sustained in his position. However, for the time being, prices are affected just to that extent, and lupulin is to-day 10 per cent. higher than it was last month, even at the very abnormal prices of that date.

Coca leaves are, on the part of some importers, quoted at lower prices than a month ago, but these quotations do not apply to prime leaves, there being a large stock of inferior goods on the market. Prime leaves have not declined, nor can they, according to present reports.

Celery Seed.—Most discouraging reports continue to be received from the source of supply, to the effect that, owing to frosts, the crop of 1893 will not be more than half that of 1892. When it is remembered that celery seed is now being very largely used in a number of patent medicines, the present high prices should not prove disturbing. On the contrary, there is every reason to believe that within the next sixty days the value of celery seed will double. The pickling season comes on; and adding to that the new demand to which I have referred above, all are persuaded that the stock is not sufficient to meet the demand.

Cod-liver Oil.—As the season for its large consumption is rapidly passing away, holders are weakening in their views as to values, and the Norwegian variety has fallen about 50 cents a barrel.

Vanilla beans, to which I referred in my last letter, continue to advance in price, with particular reference to the higher grades.

Oil of peppermint maintains its own firmly.

Oil of Wintergreen.—Such large quantities of the artificial oil are now sold that an excessive stock is created, thereby reducing its value very largely in the market.

Valencia saffron is now very low in price. There are few indications of prices being advanced.

Mandrake and Golden-seal.—Prices are ruling very low.

Gentian root has for some days past been high in price, owing to delayed receipts. More is now, however, coming to hand, and it will soon resume its normal position.

Senega Root.—Parties in the Northwest holding this, have been attempting to advance its price. It is, however, a hopeless case, as very large stocks are held here in New York City, and the season of its consumption is rapidly passing away. It will not be higher.

Menthol, that has ruled so high in price during the last few months, is suffering a relapse. This also is due to the fact that the season for its greatest consumption is about at a close.

Ipecac root is again slightly lower. The same may be said of

Mexican sarsaparilla and jalap root, there having been large arrivals of both these roots. However, the export demand has been but small for a number of months past. The least inquiry from abroad, for these important products, will again advance prices.

New York City, March 11, 1893.

CHICAGO NEWS—THE CUT-RATE WAR STILL ON.

The *Herald* of the 19th of February contained a statement that one and the same prescription, containing one drachm of piperazin, had been put up by a regular pharmacist of established reputation at the charge of $1.75, or about 25 per cent. above cost (piperazin is now sold at $1.50 for 5 grammes—about a month ago it sold at $1.80); and also had been prepared by a concern catering to cheap prices at $1.50. But the old honest druggist took *Schering's* piperazin, and the cheap concern put in *Bayer's*—at a cost of 60 cents per drachm—thus exposing the fraudulent cry and boast of cheap prices, and also showing that cheap prices and imitation go together; hence what George the Only of New York calls Muslin Druggists.

To this Mr. McConnell, of the Economical Drug Co., replies, claiming that the *Herald* asserted the cheap mixture was prepared at his place. Inasmuch as the *Herald* did not claim this at all, it seems to be a case of awakened conscience. But he then "gives himself dead away"—says he knows of no Bayer's piperazin. Of course he does not—nor does he know anything at all about pharmacy. But if his hirelings have not reported to him the war going on between the two piperazins, they have failed to attend to business.

To wind up the case: All that the druggists ever claimed is admitted by this man. Nobody should be permitted as manager, clerk, assistant, president, or editor of a Drug Company, who is not a pharmacist. If this Editor of a Drug Company, as he styles himself, does not know Bayer's piperazin, he is ignorant. If he does know it—and as it is sold at half the cost of Shering's, and he is in for cheapness, his ignorance would be doubly remarkable—then he does not tell the truth.

I submit a few choice extracts showing McConnell's literary and commercial style, as it bears directly on the present contest between the "cutters" and the League. These gems are from his advertisement in the Chicago *Post*—give him a little space without charge:

> A man may open a new dry goods store, or shoe store, or grocery, or in fact any other kind of a store, *except a drug store*, and advertise to sell goods at any cut price lower than the old-established houses in his line that suits his own sweet will, and none seek to prevent him or interfere with him in any way.
>
> Curious, isn't it, that when a new drug store opens and undertakes to sell goods at a fair profit it is boycotted, prevented from buying goods in Chicago, maligned, slandered, vilified, abused and harassed and annoyed in every possible way by the Retail Druggists' Trust?
>
> The reason is not far to seek. The harvest has been such a profitable one that the "hundred per centers" seek to maintain their grip and to drive into bankruptcy any presumptuous rival that dares to invade their Trust-cursed field of monopoly and extortion.
>
> "*De Sun Do Move*"—(*Bro. Jasper*). Our nearest neighbor and friend, the amiable Sempill, flaunts this legend, in all the pride of marking pot black on pest-house yellow: "We positively decline to handle inferior goods." 'Tis a brave druggist who thus guarantees *all* the quack nostrums foisted on an innocent public by advertising humbugs! Our fellow druggist also advertised in the *Post* exclusively, with great enterprise for him, that he would *not* reduce the price of prescriptions, as he used nothing but pure drugs. The Economical will put up prescriptions at about *one-half* Brother Sem-

pill's prices, using *identically the same pure drugs*, and physicians and customers are welcome to inspect our stock and verify this assertion. This is the difference between *real* cutting and sham cutting!

"Oh! Where Is Our Boy To-night?" We dislike to lift from the obscurity of a little cellar on the corner of Randolph and Dearborn street a little fellow who Wells up with biting sarcasm in the following gem: "We will meet all competition, whether it be the dishonest bait of the dry goods fakir or the unfair rivalry of a whiskey shop!" After that body blow such "dry goods fakirs" as Otto Young of the Fair, Pardridge & Netcher of the Boston, and Siegel, Cooper & Co. will please put up their shutters and retire from "competition" with this Well hole! And as for the poor little Economical, with its paltry $75,000 capital—well, we are flabbergasted, and know not what to say!

"*For He's a Jolly Good Fellow.*" Who? Why, Arend-Scraeder, of course! The "front half" says he "is probably the richest druggist in town," and he is in this war to a finish! We sincerely hope so! It *will* be a "finish," and he will not be as rich "when this cruel war is over!" As for The Economical, it thinks war is glorious, and we are waxing fat and rich out of it! May such "war" never cease! Dear A. also says the president of The Economical Drug Co. "is nothing but a circus bill writer." Well, it takes brains to write a good circus bill, or a good advertisement, or to manage a *real* "cut-price" drug store! Some people are always inviting invidious comparisons!

We had almost overlooked the poor little "hind half," the pompous author of all this ruin and disaster to his fellow-druggists. But he is said to be so sick of himself and so wrought up over the almost universal detestation of his former brotherly druggists that we kindly drop the mantle of charity over his shortcomings. *Requiescat in pace!*

"*Tramp, Tramp, Tramp, the Boys are Marching.*" Lack of space prevents other than brief notice of a lot of other funny "cutters." *Goetz* is "enlisted for the war." He must have more than $29 worth of patent medicines on the shelves of his large and commodious drug shop!

Wisshack offered to bet his two drug stores against $5,000 that The Economical was not taking in $150 per day. Don't, Gawge, unless you wish to get rid of your stores, which may be the case. We beat those figures at least 'steen dollars! Don't judge us by the standard of the most prosperous old timer!

A Final Word to Our Good Friends, the Public. Suppose that these combined regular druggists who are "cutting" *pro tem.* should succeed in driving The Economical out of business, do you believe that they would still continue to sell goods at moderate prices? We have been approached by an emissary of the Trust with the proposition that if we would cease "cutting" they would do likewise, and let up on us! (*Ha! ha! ha! Excuse our levity!*) Therefore, self-interest would dictate that the public support the pioneer and only *real* "cut-price" drug store. That this is fully realized is attested by our exceedingly large business, for which we are extremely grateful. We hope to merit a continuance and increase of your kind favor.

But the humor isn't all on the outside, Mr. McConnell. If you find the situation so extremely funny, how do you suppose the disinterested public feels when it sees a so-called $75,000 business in drugs carried on by a literary connoisseur who doesn't know—or says he doesn't—that there is such a thing as Bayer's piperazin? And again: Did it never strike you that the great public will "schmile like it vas grazy" when it is invited to visit your shop and examine the drugs to see that they are pure and good? No doubt you think that if you can run a technical business without technical proficiency the public can judge of chemical and medicinal virtue by ocular inspection. But to us who know something about drugs it looks as though McConnell is a new kind of humorist who is himself the character he caricatures.

It takes brains to write a good circus bill. It also takes brains to be a good clown. The brains are taken for granted. The "show" is what we are talking about.

As to betting and bluffing, the paragraph on Wisshack is as good as a maximum dose of ipecac. And this by the Editor of a Drug Company! But our "good friends, the public," care nothing for these personal endearments. What they want is, first, reliable drugs; next, fair prices. As they have no means of judging of the first point, except the character and qualifications of the druggist, and none of the second where the first is unknown or unfavorable (for prices to be fair must have reference to the quality of the goods), it is pretty safe to say that the "cutter" of legitimate drugs will have to submit his university degrees and his business and social record to the scrutiny of intelligent customers before he can convince them that cheap prices do not signify cheap goods. We will all fall back on personal records, "and the devil take the hindmost."

Chicago, March, 1893.

COCILLANA.

Respiratory inflammations always form a large proportion of the physician's cases. A Bolivian remedy which gives promise of much therapeutic efficacy is Cocillana, which was introduced a few years ago through the researches of Prof. H. H. Rusby, the eminent botanist.

Experiments were made with it by many medical investigators, who found its action very satisfactory in catarrhal inflammations of the respiratory organs, in coryza, hay asthma, bronchitis acute and chronic, influenza, and pneumonia.

The March meeting of the Medical Society of the County of Kings, N. Y., will be occupied by several distinguished gentlemen who will discuss this new remedy. Prof. H. H. Rusby, M.D., of the New York College of Pharmacy, will speak on Cocillana, its botany and pharmacognosy, with specimens and lantern illustrations. Prof. Rusby is well known to the scientific people of Brooklyn through his admirable course in botany, delivered before the Brooklyn Institute last year. Prof.

Virgil Coblentz, also of the College of Pharmacy, will treat the chemistry of the drug, and Prof. R. W. Wilcox, of the Post-Graduate School, will discuss its therapeutics.

IMPORTS OF DRUGS, ETC., AT THE PORT OF NEW YORK, FOR THE MONTH OF FEBRUARY, 1893.

Ammonia, 30 casks; carbonate of ammonia, 80 packages; ammonia muriate, 80 casks; sulphate of ammonia, 1,865 bags; sal ammoniac, 131 casks.

Arnica flowers, 4 bales.

Aërated water, 500 bbls.

Attar of roses, 6 cases.

Anise seed, 25 bags, 1 bale.

Albumin, 11 casks; egg albumin, 10 casks; blood albumin, 5 cases.

Aloes, 100 bags, 4 cases.

Arsenic, 240 bbls., 281 casks.

Arnica flowers, 4 bales.

Asafœtida, 71 cases.

Arrowroot, 25 bbls.

Anilin salt, 402 cases. 174 bbls., 155 casks; anilin oil, 20 drums; anilin and alizarin, 213 packages.

Alizarin, 121 casks, 86 packages, 54 bbls., 3 cases.

Antichlor, 160 cases.

Alkali, 2 casks; alkali, refined, 20 tierces; ammonia alkali, 558 casks.

Acid, 29 casks, 20 cases.

Buchu leaves, 5 bales.

Barium, 15 drums; barium salts, 10 casks.

Bark, 22 bales, 46 bbls., 1 bag.

Bismuth, 6 cases.

Boracic acid, 70 casks.

Borax, 7,980 sacks, 25 casks, 1 case.

Balsam of copaiba, 5 boxes.

Chemicals, 292 cases, 2,784 packages, 640 casks, 21 kegs; chemical preparations, 20 casks; chemical paper, 1 case; chemical salt, 21 cases; chemical products, 12 casks.

Cattle medicine, 1 case.

Colocynth, 4 cases.

Creolin, 200 demijohns.

Cocaine, 1 case.

Coriander seed, 100 bags.

Carboleum, 50 drums.

Capsules, 73 cases.

Cardamoms, 4 cases.

Cubebs, 24 bags.

Cod-liver oil, 200 bbls.

Chloride of lime, 246 casks, 196 tierces, 60 drums.

Cacao butter, 263 bags, 222 cases, 3 casks.

Camphor, 1,809 tubs, 206 cases; camphor oil, 1,735 cases.

Castor seed, 1,653 bags.

Cantharides, 49 cases, 1 cask.

Chamomiles, 16 cases.

Cassia, 2,747 bales, 763 bundles, 400 cases, 60 boxes; cassia vera, 263 packages; cassia lignea, 2,500 bales; broken cassia, 1,500 mats, 250 bales.

Crystal carbonate, 644 bbls.

Crude carbolic acid, 5 casks, 48 bbls.; carbolic acid crystals, 40 casks; solid carbolic acid, 45 cases, 49 casks, 80 packages.

Drugs, 178 packages, 264 cases, 44 bags, 7 bbls.

Druggists' sundries, 2 cases.

Dried blood, 3,329 bags.

Essential oil, 107 boxes, 25 hogsheads, 12 cases, 100 packages.

Ethereal oil, 22 cases.

Egg meal, 27 casks.

Eau de Cologne, 20 cases.

Ferric salt, 40 cases, 20 casks.

Fuller's earth, 4,879 bags.

Fish sounds, 54 bags.

Fish bladders, 7 casks.

Glycerin, 279 drums, 175 casks, 54 packages, 3 cases.

Gum tragacanth, 101 cases.

Gum senegal, 25 cases.

Galls, 160 bags; gallnuts, 104 cases.

Herbs, 90 bales, 36 packages, 2 cases.

Hop meal, 1 case, 5 casks.

Haarlem oil, 85 cases.

Ipecacuanha, 5 bales.

Iodine, 140 bbls.

Iron sugar, 1 case.

Insect flowers, 60 bales.

Insect powder, 75 bbls.

Jalap, 10 bales, 5 bundles, 5 bags, 15 sacks, 5 packages.

Juniper berries, 550 bags, 500 bales.

Liquorice, 131 cases; liquorice wood, 46 cases; liquorice root, 16,894 bales; liquorice paste, 100 cases.

Leaves, 27 bales.

Laurel oil, 5 cases.

Medicines, 35 cases, 1 box; patent medicines, 1 case; medicinal seeds, 55 cases.

Milk sugar, 36 cases.

Menthol crystal, 10 cases.

Malt extract, 22 cases.

Marshmallow, 2 bales, 3 casks.

Natrium, 1,096 casks.

Oxalic acid, 74 casks.

Orris root, 21 bales, 25 bags, 30 casks, 24 packages, 6 bbls.

Oil of geranium, 1 case.

Opium, 96 cases.

Orange-flower water, 47 cases, 6 casks,

Potash, 91 casks, 50 drums, 10 bbls.; sulphate of potash, 4,050 bags; muriate of potash, 8,000 bags; chlorate of potash, 1,240 kegs; prussiate of potash, 37 casks; bicarbonate of potash, 85 casks, 10 kegs,

Purgative, 4 bags.

Precipitated chalk, 17 casks.

Perfumery, 283 packages, 44 cases, 1 box.

Pharmaceutical products, 20 cases.

Phosphate, 3,000 bags; phosphorus, 150 cases; phosphoric acid, 10 cases.

Quinine, 103 cases.

Roots, 251 bales, 6 chests, 11 bbls., 2 casks, 1 case; roots and herbs, 27 sacks,

Resorcin, 17 bbls.

Rose-water, 59 cases, 12 casks.

Rape-seed oil, 17 bbls., 6 cases; rape seed, 15 sacks, 100 bags.

Sponges, 1,256 bales, 484 cases, 22 packages, 22 bags, 40 bbls.; samples of sponge, 1 case; sponge clippings, 122 bales; refuse sponge, 3 bales.

Sarsaparilla, 394 bales.

Senna, 210 bales.

Sesame oil, 25 casks, 25 bbls.

Sulphate of lime, 30 bags, 1 case.

Soda, 10 casks; soda salts, 10 casks; nitrate of soda, 13,487 bags, 1,800 tons; bicarbonate of soda, 200 kegs, 90 casks; silicate of soda, 50 casks; chlorate of soda, 60 kegs.

St. John's bread, 10 bales.

Tartar, 522 casks, 193 bags, 85 sacks.

Tinctorial extract, 218 cases, 101 casks.

Tincture, 1 case.

Varech, 21 bales.

Zinc oxide, 100 bbls.

Zinc sulphate, 50 casks.

An Artistic Term.—"What is a high light, dear?" asked Mrs. McCorkle of her husband.

"Gas," replied McCorkle, who had paid the month's bill that very morning.

DR. BINGO'S PRESCRIPTION FOR THE BABY'S NAME.

Mrs. Bingo—Oh, dear! Charles, I wish I could find a good name for baby.

Bingo—Why not call him "Atlantic Ocean?"

Mrs. Bingo—What for?

Bingo (*wearily*)—Because he never dries up.

THE VALENTINE.

I'd like to write a valentine
  With tinkling words and metre
To turn her head like red old wine,
And make her errant fancies mine,
  So featly should it greet her!

But cynical Experience—
  Life's peevish old professor—
Has long since taught me better sense,
Pegasus shies at her defense—
  A lady's heart—God bless her!

Unless—and this is Woman's say,
  Dealer in balms and spices—
Unless she liked him anyway,
Shakspere himself would lose the day,
  Where halting Jones suffices!

So, what odds if my lines are rough,
  When Polly's heart is tender?
She'd proudly read the tinkling stuff,
And—hide the rough one in her muff;
  So that's the kind I'll send her!

—*Joseph Arthur Foster.*

A BIT OF EVERY-DAY PHILOSOPHY.

When doctors disagree,
  An' dunno what does ail yer,
Then, 'twixt you an' me,
  They jes' calls it "*heart-failure!*"

A Complete Reversal.—"Queer how boys change," said the millionaire. "When I was a boy, if my father gave me a stock of blocks I was happy; but my boy won't look at anything for his birthday but a block of stocks."

A LIMITED ENDORSEMENT.

Applicant for Position—I have here a letter of recommendation from my minister.

Head of House—That's very good so far as it goes. But we won't need your services on Sundays. Have you any endorsements from anybody who knows you the other six days of the week?

THE VALUE OF CONSTANCY.

The constant drop of water
  Wears away the hardest stone;
The constant gnaw of Towser
  Masticates the toughest bone;
The constant cooing lover
  Carries off the blushing maid;
And the constant advertiser
  Is the one who gets the trade.

—*Wahoo Wasp* (*Meyer Bros'. Druggist*).

Wanted a Gold Cure.—The following appears in the *St. Louis Republic:* An aged darkey called at the Keeley Cure Institute a few days ago. "You are not a drunkard, are you, Uncle?" said the doctor, in some surprise, scanning the tidy-looking old fellow. "No, sah, I nebber tooked no mo' old Kentuck then would make me feel good, but I'se tired of bein' po' so long, an' I thought mebbe you'd give an ole man a few of dem gold shots, so I'd feel richer, an' den [lowering his voice] I'se goin' to be a deacon ob de church, an' I wants to get rid of dis yer chicken habit."—*Medical News.*

ABSTRACTS & TRANSLATIONS.

Remarks on Sterilized and Filtered Water.

The studies of Pasteur and Robert Koch and of their co-workers have introduced us at last to a realm of lowly plant life, the integral members of which are known to us as bacteria. We know that at least some forms of disease are caused by these minute germs. We know that the white scum which grows upon the surface of many organic compounds in bottles has its counterpart within the animal body; in one case, causing degenerations of the compound within the bottle; in the other, bringing about that kind of abnormal change we call disease. In both instances the causes are alike; they are the result of the almost infinite multiplication of colonies of microbes of different families.

Workers in laboratories set apart for the study of the causes of disease assure us that some diseases, certainly typhoid fever and cholera, are the results of the multiplication of these germs; and that the chief medium of their dissemination is water. Moreover, they tell us that water which has been boiled a half-hour is sterile; its bacteria are dead, and no longer have the ability to multiply. They no longer can grow in the culture media of the druggist's bottle or of the animal body. Yet it is well to recall that the work of Trudeau taught him that the lifeless remains of certain bacteria, when injected into rabbits, possessed toxic activity. Therefore after water has been sterilized by boiling, there had best be an attempt to filter it.

The reader may feel assured that quite all the water-filters sold in the market are powerless to sterilize water. They quickly come to be good culture media for bacteria, and therefore are worse than useless. For the pharmacist and the householder, about the only available method for sterilizing water is that of boiling it. Moreover, the filter itself must be kept sterile by heating it.

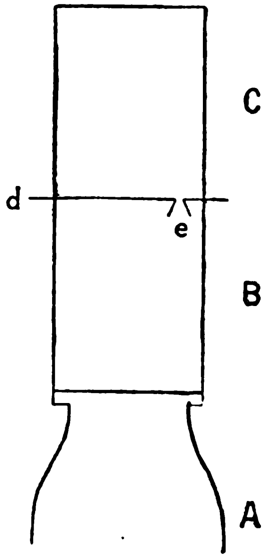
It is not for me to decide for the pharmacist whether or not it is worth while to produce organic preparations which cannot grow mould upon their surfaces, or to have for his household water which will not produce disease. The most I hope for is to point out to him how sterile and limpid water easily may be obtained.

I propose to describe the filtering apparatus which for nearly a year has been in use in my own household. As it has completely answered the purpose for which it was intended, its primitiveness and cheapness cannot be urged against it. Moreover, it is quite as complex and intricate as the filters erected by Koch for sterilizing the drinking-water used in Berlin, and for equal capacities it is much more costly.

The vessel for holding the filtering material is an ordinary cylindrical tin bucket of one gallon capacity. By means of an awl-blade the bottom of it was punched pretty well full of small holes; care was used to leave without holes a space about an inch wide all around next the wall of the bucket. These holes are the means of exit for the filtered water. But the filtering material would pass through them if they were left open.

Therefore, provide a circular disc of cotton cloth of a diameter about three inches greater than that of the bottom of the bucket. Well wash it with soap, and then boil it a half hour in water. It will then be sterile; that is, really clean. The filtering material is fine white sand mixed with small cinders screened out of the ashes of the kitchen range, which burns anthracite. None of these bits of coke would pass through a round hole ⅛-inch in diameter, and perhaps all of them would go through a hole of ⅜-inch diameter. There are about five measures of sand to one of coke; about a gallon of the mixture is contained in the filter. Put it in a large pan, cover it with water, stir about the mixture, and then quickly pour off the water containing the finely divided matter. By repeating this treatment, all the dust may finally be removed from the filtering material. Now drain it of water and transfer it to iron pans, such as are used for roasting meat. Dry the material, and level it so that it does not occupy more than two inches of depth in the pans. Now sterilize it; place the pans in the range, and for two hours subject them to the temperature used for baking bread. After such treatment there need be little fear that any manner of germ has survived.

To make the filter: Lay the sterilized cloth centrally upon the bottom of the bucket already described, using care to fold the excess of cloth up against the wall of it. Pour in filtering material, compact it, and so continue until it has reached above the edge of the cloth; then fill the bucket, and pour upon the filter hot and sterile water. This will compact the sand and coke. By means of a clean spoon remove the excess, so that their level surface may be about an inch below the top edge of the bucket.



A represents stoneware jar for catching filtered water. *B* shows vessel containing filtering material—the filter. *C* is the inverted can into which sterilized water is to be placed. The line *d* indicates one of the two thin strips which support *C* upon *B*. The opening *e* is the channel through which *C* is filled and emptied.

A filter such as described, like all other filters, soon becomes a good medium for the cultivation of bacteria. Sterilize it once each week in summer, and once each two weeks in winter, by heating the filtering material and boiling the cloth in the ways already described. Keep the entire apparatus in the coolest and cleanest place available, usually in the cellar.

The filter referred to works automatically; that is to say, as fast as water runs through it more water is supplied from a vessel placed above it. The latter is a one-gallon cylindrical tin can, having both ends closed. One end is provided with a hole surrounded by a ferrule intended to hold the cork. This vessel was, in fact, a maple syrup can.

For holding the sterilized and filtered water, we have found sufficient two stoneware jars of two gallons capacity each: this for a family of five persons.

The practical operation is begun by filling a teakettle with water from the city supply, and placing it upon the range to boil the water. Upon one of the stoneware jars the filter is set, and across the top of that are placed two thin and narrow strips (best of hoop iron) to form a support for the can which is to supply water to the filter. After the water has actually boiled a half-hour, it is at once transferred to the supply can by means of a tin funnel. The can is taken to the filter, quickly inverted, and placed upon its supports. At first the water runs freely into the filter, but as soon as it reaches the edge of the ferrule the supply is checked, and thereafter it just equals the flow of water from the filter. No further attention is required.

The jars of clean water can best be kept in a cellar. To keep out dust (or anything worse), cover them with inverted tin pans of sufficiently large size.

It seems scarcely necessary to say that all the vessels ought to be kept clean—by soaping and washing. Where soft soap (potash soap) can be had, smear it over the surfaces to be cleaned, let it remain there over night, then wash off with hot water.

The apparatus described was contrived by a fourteen-year-old boy and entirely out of material (except the sand) found within the household. Sterilizing and filtering the water has been done by the family cook. It consumes but very little of her time. Indeed, any one who will can easily duplicate the apparatus and the practice.

Leaving out of question all consideration of human suffering, my own experience is that clean water in the household will pay in dollars and cents: pay the household, not the family physician.

"We pray the Master to save the babe, when we know we have not sterilized the milk." We hope to escape disease when we know we continue to drink with the water all manner of disease-producing germs. Many of us will continue to do so, but not for as long a time as we have fought against adopting Jenner's vaccination. One word as to ice for cooling the water: use always artificial ice. Manufacturers are compelled to produce it from water out of which the air has been expelled by boiling; they must sterilize the water. To those not familiar with the manufacture of artificial ice, the writer begs to say that the whole process is clean and unobjectionable.—William Glenn, in *Pharmaceutical Review*, February, 1893.

A Rapid Assay of Hydrogen Peroxide.

Hydrogen peroxide as a therapeutic agent has been known for many years, but its ready decomposition for a long time proved a barrier to its general introduction; this decomposition into water and, for the time being, active oxygen, upon which its medicinal use depends, takes place so readily at moderate temperatures that it is impossible to guarantee the strength of the solution, even if taken from a freshly opened bottle.

Hydrogen peroxide has been called a specific in diphtheria and other throat affections, and the responsibility of the pharmacist is apparent when the so-often fatal termination of these affections is considered; as a proof of this may be cited a case in which a physician prescribed an original four-ounce bottle of this remedy, the druggist, however, dispensing four ounces from a pound bottle opened a few days previously; the disease proving fatal, enabled the physician, apparently without an examination of the dispensed hydrogen peroxide, to insinuate that if the prescription had been dispensed as written the patient might have recovered. Had the hydrogen peroxide by assay been found of good quality, the druggist could not have been reproached for dispensing the remedy from a pound bottle.

The practice of prescribing portions only of remedies put up in larger sized bottles, results in filling the shelves of the store, as so often the first prescription for a special remedy happens also to be the last. In the majority of cases in which hydrogen peroxide was found inefficient, this result was no doubt due to the use of a decomposed article. The object of this paper is to give a method for determining the value of hydrogen peroxide, which will enable the pharmacist to make an assay in the course of a few minutes; the method is so expeditious that, if desirable, the assay can be made for each prescription, and the result noted on the prescription; as a rule, however, each bottle when opened should be assayed, and, if the demand be light, either for each prescription or about once a week, so as to have a check upon the rapidity of decomposition. To the question, "What is the minimum value of hydrogen peroxide suitable for dispensing?" the answer should come from the practitioner, but the suggestion is here made that the prescription be so written as to show the volume of oxygen which the remedy should contain when it is to be used, thus enabling the pharmacist to give directions for the dilution; if this suggestion be enacted, there will result greater uniformity of strength than by dispensing original packages or by taking the specified quantity from freshly opened bottles, as this is no guarantee that the contents are of the claimed strength. The method of assay depends upon the following reaction and data: $5\,H_2O_2+K_2Mn_2O_8+3\,H_2SO_4=5\,(O_2)+8\,H_2O+K_2SO_4+2\,MnSO_4$; as one-half of the liberated oxygen comes from the $K_2Mn_2O_8$, one molecule of the latter (molecular weight 314) will liberate five atoms of oxygen (weighing 80), coming from the H_2O_2, so that 62.8 grammes $K_2Mn_2O_8$ will liberate 16 grammes oxygen, which at 0° C. will occupy 11.16 liters or at 20° C. (an average temperature) almost 12 liters, or 12,000 cubic centimeters; 1 c c. oxygen at 20° C., therefore, is liberated by the use of 0.00525 gramme $K_2Mn_2O_8$. 2.625 grammes $K_2Mn_2O_8$, dissolved in sufficient distilled water to make a liter of solution, will liberate, under proper conditions, 500 c.c. oxygen from H_2O_2, so that 1 c.c. of this solution represents 0.5 c.c. oxygen. [Solution of permanganate of potassium containing 3 grammes per liter has repeatedly been shown to be permanent for a long time (*American Journal of Pharmacy*, 1892, 565); so there is no difficulty in keeping this solution made up, provided it be protected from dust and light.]

In using this solution it was soon found that variable results could be obtained if the assay was made in the presence of only a small quantity of water; the more rapidly the permanganate was added, the more it would take; added slowly it required less, the explanation being that the sulphate of manganese produced has the power of decomposing H_2O_2, and hence, the slower the $K_2Mn_2O_8$ is added, the greater the decomposition by the sulphate, and the less $K_2Mn_2O_8$ required. By carrying out the assay in presence of a large excess of water, reliable and uniform results are obtained; to 500 c.c. water (river water will answer) in a capsule, add 5 c.c. dilute sulphuric acid and sufficient permanganate solution to give a pink tint (this counteracts any reducing action which the river water may have on the permanganate solution); now add 5 c.c. of the hydrogen peroxide, and then (from a bottle or graduate containing 175 c.c.) allow the permanganate solution to run in in a thin stream, stirring constantly until the pink color is no longer discharged; the pink color after a short time is replaced by a brownish color or precipitate (MnO_2H_2O) due to the action of manganous sulphate upon the slight excess of permanganate; measure the permanganate solution remaining in the bottle or graduate, and divide the permanganate used by 10; the result will be the volume of oxygen liberated by one volume H_2O_2.

To dispense entirely with the metric system, a solution can be made by dissolving 38.5 grains potassium permanganate in a quart of distilled water—this solution (0.264 per cent. $K_2Mn_2O_8$) is almost of the same strength as the one just described containing 0.2625 per cent. $K_2Mn_2O_8$; one fluidrachm of the permanganate solution liberates ½ fluidrachm of oxygen at 20° C. In the assay the following measures should be substituted for the ones described: one fluidrachm each of hydrogen peroxide and dilute sulphuric acid, one pint river water, and then add the permanganate solution from a bottle or graduate containing 4 fluidounces; the number of fluidrachms of permanganate solution used divided by 2 gives the volume of oxygen liberated by the H_2O_2.

Five c.c. of a sample opened several times during three months required 38 and 36 c.c. $K_2Mn_2O_8$, showing 3.8 and 3.6 volumes; one fluidrachm of the same sample required 7, 7¾ and 7¾ fluidrachms permanganate, or 3.5, 3.8 and 3.8 volumes oxygen (the first assay was made in presence of only 2 ounces of water).

An original ½-lb. bottle, purchased in a retail store, by assay, using the chlorinated soda method (*American Journal of Pharmacy*, 1892, 126) and measuring the evolved oxygen, gave 12.5, 12.4 and 12.5 volumes oxygen; there was no pressure in the bottle when opened, showing that no decomposition had taken place after bottling. The H_2O_2, labeled as 15 volumes, therefore contained less than was claimed before bottling. This sample tested by the permanganate method gave 12.7 and 12.8 volumes; three days later 12.85 volumes. The slightly higher results by this method are very probably due to the permanganate not being standardized, the solution being made from commercial crystals; but for the use of the pharmacist the method combines sufficient accuracy with rapidity, and these are the requirements.

Another sample (1-lb. bottle) upon opening gave evidence of slight pressure, indicating very probably some decomposition; assayed at once it yielded 12.8 volumes; after five days no change had taken place. The temperature of the room in which the solutions were kept was never above 20° C. and very frequently considerably below this temperature, so that as far as the temperature was concerned little alteration in the strength of the samples was to be expected. The bottles were frequently opened and portions of the peroxide removed during the time between the various assays.—Frank X. Moerk, Ph.G, in the *American Journal of Pharmacy*, February, 1893.

Note on Botanical Collections.

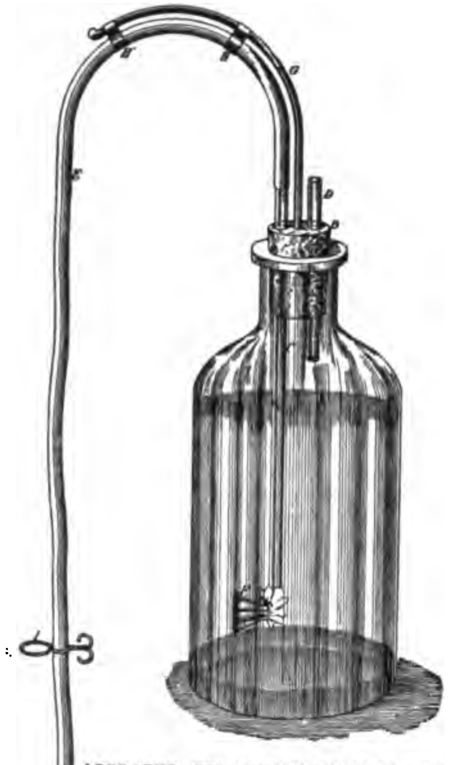
The latest exploratory expeditions and administrative travels of Sir William Macgregor have again afforded material for augmenting our knowledge of the native vegetation of British New Guinea, not only in reference to further systematic records of the flora, but also as regards prospects for new utilitarian resources. The circumspect extra exertions of His Honor the Administrator in shedding more light on the plants of this new British Territorial Possession are sure to be rewarded in time by initiating means for acquiring their new rural and technic wealth, as well for the local revenue as for private benefits. Thus, for instance, we learn from the collections gathered that several Sapotaceous trees exist in British New Guinea, and therefore the question arises whether special searches for new kinds of gutta-percha trees could be instituted, all of them belonging to the Sapotaceæ. This might perhaps best be accomplished if the services of some one of the many experts were secured who are engaged in tapping and preparing the sap of the various gutta-percha trees in the Malay Peninsula or the Sunda Islands, to institute the needful methodic observations in the Papuan forests, guided by special previous experiences. Such a measure would be neither very expensive nor particularly difficult to carry out, the main gutta-percha localities being comparatively near. As another instance of trying to turn soon to practical account the scientific information gained, might be mentioned the rubber industry. It seems quite within reach of possibility to find also among the numerous species of Papuan fig-trees one or more to provide rubber; but it may need an accustomed caoutchouc-gatherer from Assam or some other Indian locality to enter on the search and tests in New Guinea, the sap of the particular fig-trees needing carefully correct treatment for converting it into the mercantile and industrial product. In connection with this it might be mentioned here at once, that one of the species of Ficus lately discovered by Sir William Macgregor is closely akin to our East Australian *Ficus macrophylla*. The number of kinds of grasses indigenous in New Guinea proves also much greater than anticipated, some of them, such as the Panicums, evidently of tender foliage and great nutritive value. As gradually so many Urticaceous trees and shrubs have come under notice from the Possession, new sources for fibre may also become opened up for large actual industries and commerce. Of the genus Vitis, now thirteen species are known from British New Guinea, with the possible prospects of some showing cultural capabilities as grape-vines. A Spondias there is closely akin to the famous *S. cytherea*. The great variety of timber trees now already demonstrated to exist must sooner or later call forth special efforts of timber merchants to closely investigate the wood resources there beyond what already is shipped to our harbors, such as the red cedar. The Ebenaceæ are represented, as we now learn, by several kinds in British New Guinea, and thus perhaps superior ebony-wood could be added to the exports. Some new resin plants may also become accessible, as from specimens with young fruit secured by Sir William Macgregor a third species of Papuan Araucaria seems to exist, but in the highlands only, although Kauri pines have not yet been found. Of special phyto-geographic interest is the fact that to the many Alpine plants recorded in a former report, now also a species of the New Zealandian and East Australian genus Quintinia (*Q. Macgregorii*), as well as *Coprosma repens*, *Geranium pilosum*, and an Hydrocotyle with almost Azorella habit (*H. nuanaooides*), can be added, the two former showing further the extensive alliance of the Papuan highland flora to that of our most elevated far southern regions. To these Australian types should further be added a new, very tall Grevillea, from lower mountains. The rare *Rhododendron Macgregoriæ* has, with the new *Aristotelia gaulteriacea* and *Ternstræmia Britteniana*, been described some months ago in *Britten's London Journal of Botany*, as got at the summit of Mount Yule, where the vegetation, particularly as regards the numerous Ericeæ, simulates that of the Owen Stanley Ranges in their higher, though not in their highest, parts; a new Begonia from the cool heights being among the novelties from there, also an additional Quercus from the middle region. The two last-mentioned genera, as well as Impatiens and Gnetum, have not yet been discovered in any part of Australia, but perhaps in North Queensland it may yet be possible to reveal also representatives of these for the Australian flora, as Medinilla, Rhododendron, Agapetes, and Rottlera occur on the highest mountains of northeastern Australia. The botanic collections more recently formed in British New Guinea show further a Piper, a Myristica with nutmegs 2 inches long but probably not aromatic, as additional; so also a Biophytum, a Celosia, Glycine, Gouania, two Medinillas (new), Loranthus, Nauclea, two species of Homalium, representing both sections of that genus, a Fagræa, an almost Alpine Symplocos of remarkable smallness, a Scutellaria, Solanum, Petrovitex (*P. Riedelii*), Clerodendron, Gnetum (*G. microcarpum*), and the large Hombronio Pandanus (the *P. dubius* of some but not of all phytographers).

Of Elæocarpus we have now eleven from British New Guinea. Several other leading genera occur, represented in similar proportions; often, however, the species identical with Malayan or other South Asiatic congeners.

As might have been expected, Sir William Macgregor's collections are likewise particularly rich in Gesneraceæ, Acanthaceæ, Scitamineæ, Orchideæ, and Ferns (one Monogramme new) mostly of Sundiac affinities; but it is beyond the scope of this brief document to enter into detailed remarks concerning any of these showy plants, although they comprise many hitherto unknown treasures for future horticulture in any part of the world.—Baron Ferdinand von Mueller, P.H. and M.D., in *Pharmaceutical Journal and Transactions.*

Apparatus for Dispensing Lime-Water.

The Pharmacopœia directs that lime-water be kept in a container having some undissolved lime at the bottom, and that it is to be poured off when wanted for use.



APPRATUS FOR DISPENSING LIME WATER

Now there are two drawbacks to this method—one is the clouding of the liquor when the container is inclined; the other is the small particles of matter floating on the surface and in suspension.

To obviate both of these troubles, the writer recommends the apparatus described below.

Select a suitable container—one with a moderately wide mouth (about 5 centimeters preferred) and of convenient size. Fit to this a cork having two holes to carry glass tubing about 7 millimetres in diameter. Next select a piece of annealed glass tubing of above size and long enough to reach from top of cork to bottom of container; bend the tube at right-angles about 2 centimeters from one end, and draw it into bell shape or fuse to it a very small funnel. Pass the straight end through one of the holes in the cork, having it project 3 centimeters or more above. Pass through the other hole a glass tube about 10 centimeters long, leaving the ends of about equal length.

If it is desired to arrest the carbon dioxide of the air entering the apparatus, some modification of the Potassium-bulb may be substituted for the short tube.

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* Incorrectly executed by engraver.

Tie a piece of muslin over the bell or funnel end of long tube, and attach to the other end a piece of rubber tubing of suitable length for a syphon. Close the free end of rubber tube with a pinch-cock.

Prepare lime-water *according to the Pharmacopœia*, and pour into the container. After the liquor has become clear, fix the cork and its tubes in place, and the apparatus is ready for work.

A convenient support for the bend of the syphon-may be made from a piece of stiff wire stuck firmly into the cork and given the proper curve; the rubber syphon-tube is held to this by two small rubber bands.

The muslin on end of syphon effectually prevents any particles being drawn over. And the writer has never had any difficulty in drawing perfectly clear lime-water from this apparatus.—Henry T. Hicks, Raleigh, N.C.

On the Action of the Volatile Oil of Atherosperma Moschata.*

The *Atherosperma moschata*, or Australian sassafras, is a tree growing in South Australia and Tasmania, and belonging to the natural order Monimiaceæ, tribe Atherospermeæ. The literature regarding its economic and medicinal use is by no means large. The bark has been used as a substitute for tea,† while a decoction and a tincture have been employed therapeutically.

In 1861, Zeyer‡ obtained from the bark an alkaloid, which he named atherospermine, but regarding the physiological action of which nothing is known. In 1862, Greeves, in a letter to the editor of *The Lancet*, states that the bark has long been used by the early settlers and Bushmen in the form of a diet drink in rheumatism and secondary syphilis.‖ He adds that he himself and other practitioners have used it with most excellent results in acute bronchitis as a decoction (1 oz. bark to 1 pint water, boiled 10–15 minutes, dose 1–2 ozs. three or four times daily), and that it acts freely on the kidneys and skin, and facilitates expectoration, while reducing the secretion of bronchial mucus. Further, that Bosisto has obtained an essential oil from the bark, and that this has been given by Dr. Hudson with marked success in heart disease. He adds that the volatile oil must be used with great caution, as a single drop is a full dose, and quotes as his authority the *Australian Medical Journal*, of October, 1861.§ I have not been able to consult the reference, but Bosisto repeats the statement (*Pharmaceutical Journal* [3], vol. xvii, page 417).

If the volatile oil is so active in such small dose, it must differ remarkably from other volatile oils. As I was anxious to ascertain whether this is so, I applied to Mr. E. M. Holmes and Mr. Bosisto, and readily obtained from these gentlemen a sufficient supply of the bark and its volatile oil to enable me to carry out an investigation into their physiological action.

The oil is light yellow in color, with a pleasant aromatic, slightly pungent smell and taste, not unlike oil of sassafras. On exposure to the air it tends to become thick and resinous, and its solubilities in various menstrua are similar to those of other volatile oils.

The physiological experiments which I have made with it have convinced me that it also does not differ from other volatile oils in its general action, and that there is no reason for attributing to it any specially poisonous effects.

Thus, when a frog is placed under a glass jar on the sides of which a few drops of the oil have been smeared, it at first shows signs of restlessness, but in a few minutes there ensue symptoms of marked depression of the central nervous system. It first becomes clumsy in its movements, jumps with great difficulty, and then lies quite motionless and flaccid as if dead. Respiration soon ceases, the motor nerves become paralyzed in time, but the heart goes on beating for two or three hours, finally stopping in diastole. After death the muscles are quite excitable to electricity. Administration of small doses by the mouth or by subcutaneous injection gives exactly similar results. Two minims of the oil given subcutaneously is an overwhelming dose for a frog, and kills it almost at once by paralyzing the heart.

In rabbits small doses have no apparent action, but one drachm given by the mouth causes a good deal of stupor, lasting for an hour or two. The heart was not affected, but the respiration was slowed to about one-half of its original rate. Three drachms by the mouth caused death in twelve hours in complete coma, both heart and respiration being gradually and markedly depressed, especially the latter. In mammals, therefore, as in frogs, the central nervous system (spinal cord and brain) is chiefly affected.

Excretion of the oil, but considerably altered just as other essential oils are, takes place in the urine.

I have taken repeatedly doses up to 10 minims, but was unable to observe that either its local or general action differed in any way from similar volatile oils, such as oil of sassafras or of eucalyptus.

It is antiseptic, and in watery solution preserves albuminous solutions for an indefinite time.

As it was just possible that other constituents of the bark might be poisonous and impart their activity to some specimens of the oil, I made an alcoholic extract from 15 grammes of the bark and gave the whole to a rabbit, without any apparent effect. Further, I thoroughly extracted 100 grammes of the powdered bark with amylic alcohol to which a few drops of ammonia had been added. The amylic alcohol was then shaken up with hydrochloric-acid water, the acid solution drawn off and excess of ammonia added to it, when a dense white flocculent precipitate formed. This I took to be Zeyer's atherospermine. One-half of it was given to a rabbit, but the dose had not any visible action.

It seems therefore certain that neither the volatile oil nor any other constituent of the bark of *Atherosperma moschata* is particularly active or poisonous, and further that the volatile oil has a close resemblance in physiological action to other volatile oils. Regarding its uses as a diaphoretic, expectorant, and alterative, there is little doubt that it is simply similar to the many other essential oils or plants containing them which are used in medicine for similar purposes.—Ralph Stockman, M.D., F.R.C.P.E., Lecturer on Materia Medica and Therapeutics, Edinburgh School of Medicine (*American Journal of Pharmacy*, February, 1893).

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* Read at an evening meeting of the Pharmaceutical Society in Edinburgh; from *Pharmaceutical Journal and Transactions*, Dec. 24, 1892, p. 512.

† *Pharmacutical Journal* [1], vol. xv, p. 115; *American Journal of Pharmacy*, 1856, p. 73.

‡ *Vierteljahrschr. f. pract. Pharm.*, x, p. 504; *American Journal of Pharmacy*, 1862, p. 166.

‖ *Lancet*, i, 134, 1862.

§ This statement was also made by A. Redford, in *Proceedings Liverpool Chemists' Association*, republished in *American Journal of Pharmacy*, 1863, p. 452.

Gambier.*

There are perhaps few substances more widely, if indirectly, used, and at the same time less known to those outside the immediate industry concerned, than gambier. The very name is unfamiliar to the general public, while any knowledge of the origin and mode of preparation of gambier is uncommon.

Gambier is very extensively employed in the dyeing and tanning industries, and a large number of materials and articles of daily use have in the course of their manufacture been treated with the substance under consideration. Gambier is, moreover, a valuable medicine, and the more carefully prepared qualities are largely used in cases of diarrhœa, dysentery, relaxed throat, etc.

Similar in chemical composition to ordinary catechu, gambier is obtained by boiling the leaves and twigs of the *Uncaria gambir* plant, a native of the East, and found either wild or cultivated in the Straits Settlements and Johore, as well as in Java and Sumatra. *Uncaria gambir* belongs to the natural order Rubiaceæ, in which are also embraced the cinchonas or quinine-yielding plants, as well as coffee. The flowers are small and crowded together, and the plant itself is a strong, shrubby climber. Gambier appears to have been used in India for dyeing purposes from a very remote period, but its introduction into Europe commenced with the present century.

The manufacture of gambier is still conducted on very primitive lines and with the crudest appliances. A plantation is generally cropped some eighteen months after being planted; and cropping may be repeated as often as four times a year, the operation being ofttimes conducted with no sparing hand. The remaining process is exceedingly simple. The leaves, twigs, etc., are boiled in a rough cauldron until the water in which they are steeped becomes syrup. The extract is then drawn off, cooled, and stirred until crystallization commences. The gambier is then cut by hand into cubes, dried either by simple exposure to the air or by smoke, and packed in mats for exportation.

The life of a gambier plantation averages only some ten years, and in fifteen years at latest it is abandoned. The capital required is very small, and the returns are rapid; hence the favor with which the industry is regarded by the Chinese.

Gambier has a pale brown or yellow color, with an even, earthy fracture, the cubes of commerce being about an inch square. There is much variation in the quality of the gambier offered for sale, and the art of adulteration has penetrated this branch of industry.

At one time there are stated to have been eight hundred plantations in Singapore alone, and the amount of gambier imported into Great Britain from the Straits Settlements and Johore is no less than 20,000 tons per annum. Gambier is undoubtedly a valuable commercial product, and improved appliances and management of the plantations can hardly fail to develop largely at no distant period.

While to-day gambier is probably most extensively used for backing silk, it is rapidly coming into use for tanning purposes. As it can be raised so cheaply in this part of the world, and grows so luxuriantly, I think that in time it will take the place of hemlock bark, which is so rapidly disappearing in the United States. It is to be hoped that while it is on exhibition at Chicago by the Sultan of Johore our manufacturers will give it a thorough trial.

In 1891, 540,000 piculs (1 picul=133⅓ pounds) of gambier, not including cube, were purchased locally in Singapore. The greatest import was from Johore, which sent to Singapore 392,161 piculs, against 424,226 piculs in 1890. The following is the export for the years 1887 to 1891:

	Piculs.
1887	732,962
1888	672,183
1889	720,931
1890	769,704
1891	697,785

The amount of gambier shipped through this consulate to the United States for the year 1891 was 113,730 piculs (about one-sixth of the entire export), valued at $758,610 (Mexican); and for the single quarter ended March 31, 1892, it was 46,531 piculs, valued at $292,000 (Mexican).

The market price of gambier here is about $6 per picul, while cube Nos. 1 and 2 vary from $8 to $9.25.

All, or nearly all, the gambier shipped from this port to the United States is sent in American bottoms, and supplies a sure return cargo for outward oil ships.

I confidently expect to see gambier become one of the best known articles in our markets. The denudation of our oak and hemlock forests points to this state of affairs.

Singapore, Sept. 25, 1892.

Our worthy Consul has not yet heard of our American plant, *Rumex hymenosepulus*, Torr., known in our Southwestern States by the name of Canaigre; it promises to be the future source of our tanning material.—[Ed.

Alkaloid of the Geoffroya Barks.

The controversy regarding the origin of these barks, which were used as anthelmintics during the last century and beginning of this century, was never decided, but gradually was forgotten with the dropping of the barks from the various Pharmacopœias. The "gray barks" of the time were undoubtedly from species of Geoffroya, whilst the "yellow barks" were just as certainly derived from a species of Xanthoxylon. Hüttenschmied, in 1824, isolated from the gray bark an alkaloid which he called "surinamine," and which later was also known as geoffroyine; from the yellow bark, which he believed to be *G. Jamaicensis*, was isolated an alkaloid called "jamaicine," but which later was proven identical with berberine. According to the directions of Hüttenschmied it was possible to extract from the true bark the surinamine and confirm the tests given by him; it was also found that boiling water was the best solvent (1:200), that dilute alcohol dissolved less than water, and that in absolute alcohol, ether, chloroform, benzin, benzöl, etc., it was insoluble. It has the formula $C_{10}H_{13}NO_3$, melts with decomposition at 257° C., and forms salts with most acids (none with acetic acid; nitric acid even dilute gives picric acid); the hydrochlorate decomposes on addition of water; with alkalies it gives crystalline compounds; of the alkaloidal reagents only bromine water or bromine in potassium bromide solution gives a precipitate. It was found to be identical with methyl-tyrosin, with angelin prepared from the resin of *Ferreira spectabilis*, and with rhatanin, a substance extracted from a commercial rhatany extract which in all probability was adulterated with an extract from a species of Ferreira. The barks of *Andira inermis* and *A. anthelmintica* also contain this principle. It is proposed to call this principle (methyl-tyrosin) *andirin*, and drop the names surinamine, geoffroyine, rhatanin, and angelin.—O. Hiller-Bombien, *Arch. der Pharm.*, 1892, 513–548 (*American Journal of Pharmacy*, January, 1893).

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* Report by Consul Wildman, of Singapore.

Physiological Action of the Chlorhydro-Sulphate of Quinine.

Mons. Laborde reports the physiological action of chlorhydro sulphate of quinine. [For an account of the chemistry of this product, see BULLETIN OF PHARMACY, 1893, p. 42.]

The tests I have made, said Mons. Laborde, upon animals, of this new salt of quinine prepared by Mons. Grimaux, have exactly reproduced the symptomatic picture of the physiological and toxic action of quinine.

Characteristic bilateral agitation of the head, in the guinea-pig; incoördination; motor ataxia; analgesia, localized at first at the point of injection and afterward becoming generalized; then, at a more advanced stage of the toxic influence, exhilaration and quinic stupor, and, if the dose reaches a toxic total, the phenomena and the processes of terminal asphyxia.

The doses through which these effects were induced varied, in our experiments, from 10 to 20 centigrammes, given in hypodermatic injections to guinea-pigs having an average weight of 400 grammes. Even with doses of from 2½ to 5 centigrammes we obtained the charactertistic phenomena of agitation, incoördination, or quinic intoxication.

But the point in which the new salt is especially distinguished from its simple congeners, notably the sulphate and the hydrochlorate of quinine, lies in the fact of its more rapid absorption, in which its effects are sensibly more prompt. This is probably due, other qualities being equal, to the much easier and greater solubility of the chlorhydro-sulphate of quinine, as compared with that of the single salts of that base.

From this point of view, the chlorhydro-sulphate of quinine must be regarded as a precious medicament for administration in capsules or for hypodermatic employment, and it is a product, by the way, whose subcutaneous use gives rise to no appreciable local irritation.

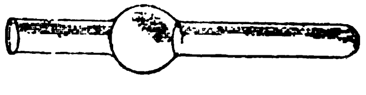
The chlorhydro-sulphate of quinine seems to me to be called to render veritable services to therapeutics.—*La Tribune Medicale*, Nov. 10, 1892.

ANTIKOL is a very new proprietary antipyretic mixture, which consists of 75 per cent. of acetanilid, 17.5 per cent. of sodium bicarbonate, and 7.5 per cent. of tartaric acid. The proprietors charge from five to six times the price of the separate ingredients, and trade on the newness of the name and the prevailing gullibility of the public to further the sale of their mixture.—Squibb's *Ephemeris*, February, 1893.

A NEW DIGESTIVE FERMENT.—A digestive ferment has been isolated from the milk juice of the Brazilian white-fig tree (*Urostigma dolarium*) by Peckolt. The milk juice of this tree is of a creamy consistency, has an almond-like flavor, and readily dissolves fibrin and coagulated egg albumin. In addition to this ferment, the juice contains caoutchouc and a principle named dolariin, which, it is claimed, has tænicide properties.—*Druggists' Circular*, March, 1893.

CONVALLARIA MAJALIS (lily-of-the-valley) has by this time reached the stage at which all newly pushed remedies arrive if they can stand the strain of overpushing. Although a remedy long used in Russia for dropsical affections, still its usefulness was not sufficiently emphasized until it was noted that it might take the place of digitalis. This it still cannot do, but it does offer a very efficient alternate for digitalis in many cases. It is to be hoped that the Revision Committee will recognize it in the forthcoming issue of the U. S. Pharmacopœia.—Squibb's *Ephemeris*, February, 1893.

A NEW TEST-TUBE.—The illustration which we give here exhibits a new form of test-tube which has been designed by Mr. Hoare, a student in Guy's Hospital. The bulb is an effective means of preventing boiling over in many chemical operations, and when the lower part of the tube is only partly filled the tube can be placed on a bench without spilling the contents. In use we expect that the tube will develop other advantages according to the notions of each operator, but meanwhile it is likely to be a tube which medical men will take to. The leading sundries houses stock the tubes.—*Chemist and Druggist*, Feb. 25, 1893.



STERILIZATION OF HYPODERMIC SOLUTIONS.—D. Marinucci has found large numbers of living germs, some of a harmful nature, in freshly prepared hypodermic solutions of strychnine sulphate, morphine hydrochlorate, atropine sulphate, eserine, etc. Sterilization by heat did not affect the therapeutic value of strychnine and quinine, but partly checked the action of morphine and atropine. Eserine and atropine solutions are said to be best prepared with a solution of corrosive sublimate (1 in 1000), which renders them aseptic without modifying their therapeutic properties. Morphine solution could not be sterilized without injuriously affecting the properties of the alkaloid. It is suggested that all such solutions should be renewed every fourteen days.—*Centr. f. Bakt.*, xii, 282 (*Pharmaceutical Journal and Transactions*, Feb. 25, 1893).

THYROID EXTRACT.—Dr. Edmund White, B.Sc., pharmaceutist to St. Thomas's Hospital, informs the *British Medical Journal* that he has succeeded in preparing the active principle of the thyroid, whatever it may be, in a dry state. In his process the glands were first exhausted with a mixture of equal parts of glycerin and water. The filtered fluid was then acidulated with phosphoric acid, and calcium hydrate added until an alkaline reaction was obtained. The precipitate was filtered out as rapidly as possible, washed, and dried over sulphuric acid without heat. The powder obtained in this manner has been employed successfully by Dr. Davies in the treatment of cases of myxœdema. The dose given was 3 grains, corresponding to one-eighth of a gland, and of this about one grain was organic matter. Recently Mr. White has been making 3 grains equivalent to one-sixth of a gland. He is carrying his investigation further, with a view to determining whether the active principle is a ferment or not.

A NEW COMPOUND OF IODINE AND LEAD.—A new iodine compound of lead is described by M. Groger (*Monatsh. für Chem.*), and obtained as follows: To a solution of 1 gramme of iodine in 10 c.c. of absolute alcohol, is added one of 5 grammes of crystallized acetate of lead in 15 c.c. of water and 30 c.c. of absolute alcohol, and the mixture set aside for fourteen to sixteen hours at the temperature of the room, for the precipitation of small quantities of basic iodide of lead. The fluid is then quickly passed through a filter moistened with alcohol, and diluted with 100 c.c. of water, when a brownish-red precipitate occurs. This is collected on a filter, washed with water free from carbonic acid, and dried at the temperature of the room. The drying is continued as long as any iodine is yet being given off. The final product is described as a dark brownish violet-red powder, which is permanent at ordinary temperatures. The new body is considered as a tri-iodo-oxy-iodide of lead, $PbO.PbI_2I_3$.

ACID CRESOTIC (paracresotic acid) has increased in medicinal value in the past year, as is evident from the accumulating favorable results from Continental observers. Practically nothing has been published as yet in this country. Abundant evidence now goes to prove what was pretty well established a year ago, that it is absolutely necessary that the *para*cresotic acid only be used. In the form of *sodium paracresotate* it has proved itself a safe and reliable article to use, especially with children. Prof. Demme has employed this salt in the Jenner Hospital in Berne, and his records show good results in acute articular rheumatism, catarrhal pneumonia, gastro-intestinal catarrh, and typhoid fever. As an antipyretic it was found to be inferior to salicylic acid, but it was better tolerated by the digestive organs, and did not produce the congestion salicylic acid sometimes causes. In the typhoid fever cases it checked the diarrhœa very markedly. Young adults may be safely given as much as 4 grammes (60 grains) daily.—Squibb's *Ephemeris*, February, 1893.

A PLANT TO SUPPRESS MALARIA.—Dr. Brandes, of Hanover, calls attention to the properties of the *Anacharis alsinastrum*, a water plant which has hitherto been considered an unmitigated plague, choking up rivers, and altogether useless. He has remarked that in the district where he lives, and where malaria and diarrhœa yearly appeared in a sporadic or epidemic form, these diseases have gradually decreased since the *Anacharis alsinastrum* began to infest the neighboring rivers and marshes, and since four years have totally disappeared. The above-named water plant nourishes itself on decayed vegetable matter, and grows with incredible rapidity. It thus destroys the germs which produce malaria and diarrhœa; and besides, its presence obliges the frequent cleansing of standing waters—a measure beneficial to health. Dr. Brandes therefore proposes that the experiment should be tried of planting the Anacharis in marshy districts. It is also useful in protecting the young fish, and affords an excellent fertilizer. The plant came originally from Canada, whence it was taken to England, and thence to Germany about 1840.—*Druggists' Circular*, March, 1893.

THE ORIGIN OF CANCER.—The tendency of recent years has been to attribute all diseases of unknown origin to bacteria; and, considering that these organisms are almost universal in their distribution, it is not to be wondered at that their presence has been verified in many instances where further investigation showed clearly that no specific pathogenic forms existed. Thus some observers have claimed to have proved the origin of cancer to be due to a bacillus as the exciting cause, but their results have not borne criticism. Later researches have tended to associate the disease with the presence of parasitic protozoa, and the latest contribution to our knowledge of the subject is contained in the Morton Lecture recently delivered by Dr. James Galloway. He describes the parasites, found on microscopic examination of cancer of the breast, as rounded or oval structures varying from 2μ to 10μ in diameter, sometimes having a very distinct capsule and a smaller body of variable shape near the centre of this. They occur in the cell-body in numbers varying from one to eight or ten, and may also be observed in the cell-nucleus and intercellular spaces. The tissues are prepared for examination by fixing in Flemming's solution, hardening in alcohol, and staining the sections with Erhlich's hæmatoxylin solution, this method being said to give as good results in the way of sharpness of definition as can be obtained.—*Pharmaceutical Journal and Transactions*, Feb. 11, 1893.

CREASOTAL.—This is the name which Professor Brisonnet, of the School of Medicine, Tours, gives to the body obtained by combination of carbonic acid and creasote (*Répert. de Pharm.*). The product is likely to be of considerable therapeutic value, for it is a neutral, bland, sweet oily liquid, without odor, non-irritating to the mucous membrane, and is readily borne by the stomach. It is made by acting upon sodium-creasote with chloro-carbonic acid, $COCl_2$, in alkaline solution. The creasotal separates and sinks to the bottom of the mixture. It is collected, washed with a weak cold solution of alkali, and any adhering water is driven off by a gentle heat. The specific gravity of the purified creasotal is 1.165; it is insoluble in water, glycerin, and dilute alcohol, but soluble in all proportions of strong alcohol, ether, chloroform, and benzin. A hundred parts of it are equal to 90 of creasote, yet it has been given in doses of 10, 15, and 20 grammes per day without disturbing digestion. In the intestines it is resolved into its components, creasote and carbonic acid, and creasote is found in the urine half-an-hour after a dose has been taken. Its use is indicated in tuberculosis and other diseases for which creasote is prescribed.—*Chemist and Druggist*, Feb. 18, 1893.

EUCALYPTEOL.—This substance, which is being recommended in the French medical journals as a substitute for eucalyptus oil and eucalyptol, was first prepared by M. Anthoine, a pharmacist, who obtained it by treating oil of eucalyptus with hydrochloric acid. The eucalypteol or hydrochlorate of eucalyptene thus formed occurs in the form of white micaceous scales, having an odor resembling that of camphor and a peculiar, slight but persistent taste. The compound is almost insoluble in water and glycerin, but freely soluble in alcohol, ether, chloroform, fixed and volatile oils, petroleum ether, and acetic ether. Alcohol, however, causes a slight decomposition in the cold, a substance being formed of which the odor recalls that of terpinol. A similar reaction may be caused by water, especially in the presence of alkalies, hydrochloric acid or an alkaline chloride, and a terpinol-like hydrocarbon of agreeable odor resulting. Eucalypteol melts at 50°, and commences to decompose near 115°. Therapeutically, it is said to cause no ill-effects, being well tolerated by the stomach and producing no irritation. No toxic effects were presented even when as much as 10 to 15 grammes of the compound was administered in a single dose. The usual adult dose is 1 to 1.5 gramme daily.—*Bull. Gén. de Thérap.*, cxxii, 316 and 433.

ANTINERVIN.—This product—a mixture of 50 per cent. of acetanilid, 25 per cent. of salicylic acid, and 25 per cent. of ammonium bromide—is now reported to have a much wider field of usefulness than a year ago. Observers give good reports from England, Germany, and Italy. In Glasgow, Scotland, it attracted much attention in the recent epidemic of influenza. It nearly always relieved the pains in the back and head, and rapidly reduced the fever. It produced copious perspiration and no unfavorable effects.

Dr. G. Laurenti, of Italy, now summarizes his own personal experience: (1) It can be used with advantage in all forms of abnormal excitement of the nervous system, whether to subdue neuralgia or as a general nerve sedative; (2) in rheumatism it may be used, and seems undoubtedly indicated as a drug comprising in itself antirheumatic, antipyretic, and analgesic properties; (3) its low price and feeble toxicity, together with the evidence already given, render it a useful addition to our list of remedies.

Practically nothing has been written upon it in this country during the past year, and it may be hoped that a good reason may be furnished to account for this inattention in that we obtain fully as satisfactory results by administering the ingredients in proper proportions made up into an extemporaneous prescription, or otherwise dispensed separately.—Squibb's *Ephemeris*, February, 1893.

ASBOLIN.—This substance, obtained by Braconnot from the soot formed on burning wood, and regarded by him as a definite compound, is a syrupy liquid with a yellowish tint. Béhal and Desvignes show that in reality it is a complex mixture, and they have been able to isolate some of its constituents. Two bodies were obtained after purification from an alcoholic solution, one of which distilled in air at 154° to 155°, and the other at 158° to 160°, both without decomposition. On analysis, figures were obtained indicating the formulæ to be $C_6H_6O_2$ and $C_7H_8O_2$ respectively. The first was soluble in water and in alcohol, the latter solution yielding a green coloration with perchloride of iron which, when the solution was diluted with water, changed to violet on the addition of ammonia. Dissolved in chloroform, caustic potash colored it blue, the color afterwards rapidly changing to brown. A warm aqueous solution reduced Fehling's solution, and the body appeared to be identical with pyrocatechin. The substance accompanying it was also soluble in water and very deliquescent; alcohol, acetic acid, and benzol dissolved it readily, but it was somewhat insoluble in petroleum ether; its color reactions were like those of the former compound, and the authors regard it as being homopyrocatechin. They point out that it is curious to note that asbolin, which is employed in the treatment of tuberculosis, should prove to contain in the free state the two phenols which as methyl ethers constitute the chief part of creasote, another medicament employed for the same purpose, guaiacol being the monomethyl ether of pyrocatechin, and creosol the monomethyl ether of homopyrocatechin.—*Journ. de Pharm. et de Chim.*, xxvi, 181.

NEW SUPPOSITORY MOULD.—An ingenious mould, by means of which suppositories can be quickly made in the cold, is described by M. Gautier. It consists of a truncated metallic cone divided longitudinally into two parts, which fit accurately together by grooved surfaces. This cone is bored cylindrically for some distance, the diameter of the hole corresponding at this part with that of the wider end of a suppository, whilst at the upper end of it there is a female screw. Lower down it gradually tapers to a point, thus assuming the exact shape of a conical suppository. In use, the two parts of the cone are kept in position by an outer jacket of metal which slips over them. The medicament having been well mixed with the previously grated cacao butter, the exact weight of the mass required in a suppository is introduced into the cylindro-conical opening through a small funnel. By means of a piston, which exactly fits the cylindrical part, and is constructed with a milled head and screw at the upper end, pressure is then applied, and the finished suppository may be released at once. As will be readily seen, every one can be made the same in weight and form as the rest, and they are said to be very compact, whilst presenting a brilliant surface. Hollow suppositories for the reception of liquids may be prepared in the same apparatus by introducing 2.7 grammes of cacao butter previously rubbed up in a mortar, then pressing into shape with a piston having a conical point, which thus forms a cavity capable of containing 1.2 c.c. of liquid. After filling with the medicament, the suppositories may be closed by small buttons of cacao butter, which are warmed slightly before application.—*Monit. de la Pharm.*, xliii, 1213 (*Pharmaceutical Journal and Transactions*, Feb. 25, 1893).

THERAPEUTIC APPLICATION OF CREASOTE.—Creasote for medicinal use obtained only from beechwood tar still holds its own in professional popularity in the treatment of pulmonary tuberculosis—largely used added to or in conjunction with cod-liver oil. Larger doses than used to be given are still urged more forcibly. In Southern Germany they appear to be very bold, and even approach recklessness, in the heroic doses employed.

Dr. Francis P. Kinnicutt, of New York City, in his Middleton-Goldsmith Lecture for 1892 on "New Outlooks in the Prophylaxis and Treatment of Tuberculosis," gives the most complete consideration of this subject which has been reported for some time back. One of his most interesting series of records are those cases treated by creasote and guaiacol. He concludes that large doses apparently possessed no advantages over much smaller ones, and had no greater effect upon hectic and night sweats; that subcutaneous injections of the drug possessed no advantages over administration by the mouth; that whatever beneficial influence it might exert in pulmonary tuberculosis could be effected with a comparatively small dosage, and that favorable results could be expected only by its continuance and prolonged employment.

In Germany, Dr. Julius Sommerbrodt states that the earlier it is used the better are the results. He therefore has used it in so-called scrofulous children with very good effect. He recommends it in larger doses than usual, as he finds smaller ones are useless, and he continues it for several months. It will thus be noticed that observers differ in some of their conclusions.

In France, pertussis and laryngitis accompanying influenza have both been treated by creasote with success.—Squibb's *Ephemeris*, February, 1893.

ALKALOIDAL ASSAY OF DRUGS.—Chas. Caspari, Jr., states that in his opinion it is unwise to be content with the gravimetric assay of alkaloidal drugs, since the proportion of impurity in the crude alkaloids extracted varies so widely. He says (*Pharmaceutical Review*): "It can be safely assumed that the operator will choose for isolation of the alkaloids the method likely to yield least contamination with coloring and other foreign matter; the crude residue thus obtained may be weighed, and should then be dissolved in an excess of deci-normal hydrochloric acid with the aid of gentle heat, noting the number of cubic centimeters of acid used, and making the solution up to 50 or 100 c.c. A sufficient quantity of indicator (Brazil-wood decoction) is now added to show the pale yellow color produced by the acid, and centi-normal alkali then carefully added from a burette, until the pale pink color (permanent) shows that a trace of alkali has been added in excess. The correct reading of the burette is now made, and from the amount of acid in combination with the alkaloid is calculated as follows: Our hydrochloric acid being $\frac{N}{10}$, we must multiply the number of c.c. used by 10, as $\frac{N}{100}$ alkali was employed; and from this product subtract the number of c.c. alkali necessary to produce the permanent pink color—the remainder will be the number of c.c. of $\frac{N}{100}$ hydrochloric acid combined with the alkaloid, and from this can readily be calculated the actual amount of pure alkaloid present, by means of the proper multiplication factor.

In the case of drugs containing several alkaloids, the results can only be calculated as of totals, our methods of assay thus far giving only imperfect and unsatisfactory separation, and the multiplication factor used must be found from the mean of the molecular weights of the alkaloids known to be present; thus for cinchona bark the mean of the molecular weights of the four alkaloids —quinine 324, quinidine 324, cinchonine 303, cinchonidine 308—would be 315, and hence each c.c. $\frac{N}{100}$ hydrochloric acid will be equivalent to 0.00315 total alkaloids; for nux vomica the mean of the molecular weights of the two alkaloids—strychnine 334, brucine 394—would be 364, and hence each c.c. $\frac{N}{100}$ hydrochloric acid will be equivalent to 0.00364 total alkaloids.—*American Druggist*, Jan. 16, 1893.

ASSAY OF EMETINE.—G. Kottmayer, in a critical article on this subject in the *Pharmaceutische Post*, comments adversely upon Flückiger's process for the extraction of emetine from ipecacuanha. He says that the chloroform residue is not exclusively emetine, and that the drug is by no means completely extracted. Other similar processes are also referred to, especially Kremel's, in which a mixture of lime and powdered ipecacuanha, after treament with water and drying, is extracted with chloroform. The alkaloidal residue from this contains "resin," *i. e.*, a substance insoluble in dilute hydrochloric acid. This the author finds to be the objection to all known processes, and it is necessary to make a correction for the amount of insoluble matter thus retained with the alkaloid. Lloyd's ferric hydrate method of assay shares the same objection, the author remarking that it gave but slight satisfaction. He thought, however, that the principle of fixing the organic acids and coloring matter of the ipecacuanha with a heavy metal was a good one, and he devised the following method: Fifteen grammes of the powdered root was macerated in 148 c.c. of alcohol and 2 c.c. of hydrochloric acid (sp. gr. 1.12) for four days at 40° C. Then 100 c.c. of the clear tincture was removed by a pipette, 20 c.c. of alcoholic lead acetate solution (1 in 10 of proof spirit) and 1.5 gramme of slacked lime added, and the mixture evaporated on a water bath to a syrupy consistence; 5 grammes of powdered glass was then added, and the whole evaporated to dryness and powdered. The powder was then extracted with chloroform for ten hours, by which time no more alkaloid was removed by the solvent. The chloroform, on evaporation, left a brownish-yellow substance, which was weighed, the alkaloid extracted with 2 c.c. of normal sulphuric acid, and the insoluble portion collected, dried, and weighed, the difference giving the actual amount of emetine.

HOW PILLS ARE CHANGED BY LIGHT, AND HOW TO KEEP THEM.—Mr. A. C. Zeig has some ideas on the storing of pills, and recently he gave the *Pacific Druggist* the benefit of them. Mr. Zeig, quite properly, points to the fact that pills are often kept for a considerable time, and that the druggist is apt to forget that meanwhile the ingredients of the pills may be changing and their therapeutic properties deteriorating. "A perfect coating," he says, "materially assists in keeping the mass in its proper state of preservation. The use of amber instead of flint-glass bottles, for storing pills, is to be preferred should they be exposed to light; a wrapper or carton accomplishes the same object."

Among gelatin-coated pills most sensitive to light the following may be enumerated:

Mercury protoiodide pills, changing from a yellow or light green to a greyish, and sometimes to a dark, color, due to a partial decomposition of the protoiodide with separation of metallic mercury in a finely divided condition, this change being accelerated in presence of moisture.

Phosphorus pills assume a reddish-brown color, due to transformation of the phosphorus into the inactive amorphous variety.

Pills containing ferrous iron undergo oxidation with a noticeable change in color, indicating an approach to the ferric condition.

Quinine pills and white pills generally, on long exposure to light, in the course of time assume a light-brown color, due to oxidation of traces of iron naturally present in the gelatin employed for coating.

Santonin pills change in color from white to a dull yellow, resembling picric acid.

Pills containing silver salts are naturally very sensitive to light, making the best possible protection necessary.

Calomel pills of a greyish or dark color are sometimes met with in the market. While this change from a natural white to a dark appearance may frequently be attributed to the effect of bright light, causing partial decomposition and separation of finely divided metallic mercury, it is more frequently due to the presence of sulphites in the gelatin used for coating, being employed by manufacturers of gelatin for the purpose of bleaching it. A careful selection of the gelatin employed for coating is therefore necessary.

The pills generally affected by an abnormally high temperature and atmospheric changes are such as embody either hygroscopic or resinous ingredients, or which, from the nature of the constituents, are quite soft, as is often the case with pills containing soap. Especially when moist air has access to them, the influence of heat from various sources, whether produced by radiation from a stove or by being in too close proximity to a lamp or gas flame, often facilitates undesirable changes in the ingredients of the mass and coating, thus causing the mass to stain through the sugar coating, or causing it to sprout, as is sometimes the case with gelatin-coated pills, rendering the coating itself more or less adhesive.

Pills containing hygroscopic ingredients—such as potassium iodide, potassium carbonate, etc.—require the closest attention in order to insure their proper preservation. By storage in bottles tightly corked, remote from any source of heat, preferably in a place where the variations in temperature are not too pronounced, any difficulties of this nature may be avoided.

SOLID CHLOROFORM.—A discovery of great interest and of considerable importance to medical chemistry has recently been make by Professor Anschütz, of Bonn, in regard to the preparation of pure chloroform. The discovery, as described in the *Berichte*, shows that Professor Anschütz has succeeded in combining chloroform with the anhydrides of salicylic and cresotinic acids so as to produce solid and portable substances from which pure chloroform can readily be isolated. The discovery was made accidentally, as many chemical discoveries have been. In the course of preparing salicylide — *i.e.*, salicylic anhydride, $C_6H_4.CO_2$, salicylic acid being $C_6H_4.OH.CO_2.H$—by acting upon salicylic acid in toluene solution with phosphoryl chloride and subsequently washing with sodium hydroxide and water, Professor Anschütz had occasion to use chloroform towards the end of the process, and found that a compound of the chloroform with the salicylide was deposited in magnificent colorless crystals. This compound furnished not only a pure salicylide, hitherto only obtainable with difficulty, but it was found that none of the "usual impurities of chloroform" crystallized along with the compound. Professor Anschütz calls this compound salicylide-chloroform. The simplest formula is $C_6H_4.CO_2.2CHCl_3$, but the molecule contains four of the salicylide radicles. A similar compound is obtained from the cresotinic acids, the ortho acid being the best to work with. In this case the compound may be represented by the formula $C_6H_3.CH_3.CO_2.2CHCl_3$. This compound contains 30.8 per cent. of chloroform, while the salicylide contains 33.24 per cent. Of the two the cresotinic compound is the more stable, being practically permanent in the air, whereas salicylide-chloroform slowly loses chloroform when exposed to the air. In both cases chloroform is given off steadily when the compounds are heated to 100° C., although their melting-points are considerably higher.

These solid chloroforms can readily be prepared, for all that is necessary is to add either salicylide or ortho-cresotinic anhydride to chloroform, when, after a day, the crystalline compound separates out, leaving out, as we have said, any impurity which may be present in the chloroform. Professor Anschütz states that in this solid the chloroform does not decompose, as pure unalcoholized chloroform does, on exposure to light, and, therefore, that the new form should be of great advantage as an anæsthetic. A further advantage is the ease with which the compound may be prepared, and the fact that the anhydride residues after the chloroform has been driven off can be used again and again by simply bringing them into contact with chloroform and allowing it to remain for twenty-four hours. It is apparent from the foregoing facts that we have in this discovery a process for the purification of chloroform, and also a means for storing and transporting the anæsthetic such as appears worthy of trial. Doubtless Professor Anschütz's results are based upon the use of the commercial chloroform of Germany, which had already undergone a purification process of some kind, so that it is not certain that the aromatic anhydrides will effect the complete purification of roughly-distilled chloroform. But it is decidedly beneficial to have such a simple means of purification as this when for any reason a pharmacist or physician should wish to produce an absolutely pure compound. We hope that the process will receive the attention of chloroform specialists, who have, perhaps, the best means for judging whether it is likely to become a commercial one or not. If the compound should be placed in the hands of anæsthetists, there ought to be no difficulty in using it, the heat of a water-bath sufficing to drive off chloroform from the solid.—*Chemist and Druggist*, Jan. 21, 1893.

EXPERIMENTS WITH CARPAINE.—Some German laboratory reports, not strictly reliable, having recently put forward this alkaloid for advertising purposes, Dr. C. L. Rumke obtained from Dr. Greshoff, the discoverer, some specimens of carpaine, and submitted the same to renewed experiment. The experiments were made in the pharmaceutical laboratory of the University at Leyden.

In Merck's *Jahresbericht* (1891) carpaine is claimed to be a substitute for digitalis; and in support of this claim, von Oefele is referred to as an authority. Dr. Rumke therefore opened a correspondence with von Oefele on this subject, as the latter's so-called results were published only in Merck's *Jahresbericht*. [In Brestowski's *Handwörterbuch der Pharmacie*, 7, 1893, page 555, is to be found similar information from the pen of von Oefele.—J. B. N.] The correspondence brought to light the fact that very few experiments had been made (Merck had gone so far as to give doses and a long list of formulæ for carpaine), and that those that had been made proved, if rightly interpreted, just the opposite of von Oefele's and Merck's conclusions.

Assuming that it is not for a factory, as Merck's, to prescribe doses and formulæ, and that there is a dangerous element for the physician hidden in those scientifically tinged advertisements, Rumke's experiments have shown that we must not expect to have in carpaine a substitute for digitalis, notwithstanding the fact that it slows the heart-beat in chickens and frogs.—*Ned. Tijdschr. v. Pharm.*, March, 1893.

PHARMACEUTICAL FOOTBALL CLUB.—A very successful smoking concert was held by the members of this club and their friends, at the Frascati restaurant, Oxford street, on Friday evening, Feb. 10th, when the chair was taken by M. Carteighe, Esq., President of the Pharmaceutical Society of Great Britain.—*Pharmaceutical Journal and Transactions*, Feb. 18, 1893.

THE VIRGINIA STATE BOARD OF PHARMACY.—The Virginia State Board of Pharmacy has adopted the plan which, we believe, originated with the Illinois State Board of Pharmacy, of requiring of candidates for registration practical demonstration of their fitness to be registered. In other words, their examination includes the actual dispensing of prescriptions and other similar work.

THE ATTITUDE OF THE WORLD'S COLUMBIAN EXPOSITION TOWARDS NOSTRUMS.—From the pamphlet on Classification and Rules published by the World's Columbian Exposition we quote: "Rule 15. Articles that are in any way dangerous or offensive, also patent medicines, nostrums and empirical preparations whose ingredients are concealed, will not be admitted to the exposition."

BACTERIOLOGICAL INSTITUTE FOR BRUSSELS.—A large sum of money has been placed in the hands of the municipal authorities of Brussels, by several gentlemen interested in the progress of scientific research, for the object of establishing a laboratory of hygiene, therapeutics, and bacteriology. The institute will be built on land provided by the city, to which the edifice will belong, but it will be administered by the University of Brussels.—*Pharmaceutical Journal and Transactions*, Feb. 4, 1893.

PHARMACEUTICAL COMMENCEMENT OF MEHARRY MEDICAL COLLEGE.—The fourth annual commencement of Meharry Pharmaceutical Department, of Central Tennessee College, Nashville, Tenn., was held in connection with that of the Medical Department, February 7th, at the Gospel Tabernacle. There were six graduates in pharmacy. The valedictory address was delivered by F. B. Coffin, of Texas.

Twenty-one pharmaceutical students were enrolled during the past session.

The demand for thoroughly educated colored pharmacists increases, and far exceeds the supply; and the services of all the members of the present graduating class were engaged in advance of their graduation.

The Scientific Section of the American Pharmaceutical Association for 1893.—Our attention has been called to the importance of the work that is likely to be done by this Section of the A. P. A.

The international character of the meeting, and the gathering of so many eminent *confrères* from all over the world, must attract much discussion that will bring out interesting results for the benefit of many objects, pharmaceutical, chemical and botanical, worthy of achievement.

Indian Eucalyptus Oil.—We may soon hear of Indian eucalyptus oil upon our markets. In Ootacamund, eucalyptus trees are systematically planted on a large scale by the Madras Forest Department, and Mr. Jameson, who, under Mr. Lawson, is in charge of the Botanical Gardens at Ootacamund, has recently given much attention to the distillation of the oil. Mr. Brown, who is connected with a plantation in the Nilgiris, has also commenced the manufacture of the oil at the Felixtowe Laboratory, Coonoor.

Interstate Retail Druggists' League.—The next annual meeting of the Interstate Retail Druggists' League will be held in Chicago, May 22, 1893, in the Chicago Apothecaries Society's rooms, Schiller block (rooms 1111–1113), 109 Randolph street. All State and local Associations are invited to send representatives and delegates, and manufacturers and proprietors are invited to attend and take part in the proceedings of the meeting.

For information concerning rooms and accommodations, address Mr. H. Biroth, Schiller block, 109 Randolph St., Chicago. For local information, address Paul Behrens, 727 Indiana St., Chicago. For matters pertaining to the League, address Robt. J. Frick, Secretary, Sixth and Chestnut Sts., Louisville, Ky.

Dr. Christian Brunnengraeber.—We have just learned that Senator Dr. Chr. Brunnengräber, of Rostock, as the result of an apopletic stroke about fourteen days ago, passed away peacefully on the 19th inst. The apothecaries of Germany lose in him one of their most distinguished representatives, whose name was known and respected far beyond Germany's borders. The inexorable reaper has borne away in him a colleague who for many years, with intelligence and conscientiousness, upheld the interests of his profession, and who, in view of his untiring creative power and love of labor, might long have continued to promote them. In common with all onr colleagues, especially with those to whom he stood nearer during life, we deplore his premature loss. He was a man of honor, to the core. Peace to his ashes.—*Internat. Pharm. General-Anzeiger*, p. 44, No. 5, 1893.

Female Pharmacists.—Whether women might not become druggists is, we read, a question which is still being much discussed in France. The Society for the Amelioration of the Position of Women, of which Madame Maria Deraismes is the President, has decided to grant an allowance annually to a promising girl of good conduct and slender means to enable her to go up for the examination which has to be passed in order to qualify persons to dispense medicines. It is suggested that opportunities should be taken as they arise to increase the number of careers open to women who have to earn their own living, and among them, it is urged, none is more suitable than that of a druggist, since the keeper of a druggist's shop need not stir away from home. That career is open to women in Great Britain, but hitherto it has not appeared to present any attractions.—*British Medical Journal*, Jan. 14, 1893.

Buffalo College of Pharmacy (Department of Pharmacy, University of Buffalo).—The students of the College of Pharmacy have recently finished the examinations covering the first half of the year's work, and are now ready, after a week's vacation, to make up for delinquencies of the past months or add to their good work. The College year thus far has been most satisfactory.

Moving-day came a little out of date. No objection was raised, however, either by instructors or students, when the word was given to pack bag and baggage and move onward and upward to the new College building, which contains added facilities, particularly for the laboratory work in chemistry, microscopy, and pharmacy. The old Medical College was well adapted for its requirements, but the addition of new departments as well as the development in the laboratory system of instruction have demanded larger and more modern quarters.

Boston Branch of the Interstate League.—A largely attended meeting of Boston retail druggists was held on Jan. 30th, and resulted in a local organization being formed which is to become a branch of the Interstate League as soon as enough members are enrolled. Much enthusiasm was shown by those in attendance, which if continued will crown the efforts of the body with success. The druggists now have the situation within their grasp, and have only to take advantage of the opportunity presented to them to contest the field with the "cutter." It is not only against the sale of patents at "cut rates" that they can protest, but good work can be accomplished against the increased tax on alcohol, the proposed revival of the stamp tax, and the supplying of preparations to physicians by manufacturers. These questions, and many others, are staring druggists in the face; they can be fought only in one way, and that is by organization. Will you allow this last chance to go by? The following efficient corps of officers were elected, and they should have the aid and encouragement of every pharmacist in Boston and vicinity: President, N. W. Styles; Vice-President, C. P. Flynn; Secretary, C. A. Bartlett; Treasurer, G. W. Cobb; Executive Committee—J. W. O'Mealey, C. A. Charles, and C. A. Miller.—*American Druggist.*

THE LAW ON PHARMACEUTICAL SPECIALTIES.—The Paris Court of Appeal has recently given judgment in a somewhat interesting case, in which a manufacturer of a specific against drunkenness claimed that his preparation (called "Luperine") was not a pharmaceutical specialty in the meaning of the law. The defendant, M. Mouchet, *alias* Luper, in 1891 commenced the sale of "Luperine" in the form of a powder, its component parts being gentian, calumba, and quassia. He was in due course prosecuted for illegal practice of pharmacy, and the Tribunal of the Seine, after hearing the evidence of MM. Bourgoin and L'Hoste, expert chemists, gave judgment against the defendant, inflicting a fine of 500*f.* The Court of Appeal has affirmed the finding of the lower tribunal, the decision being based principally on the fact that the evidence of the expert M. Riche proves that the preparation is a mixture of simple drugs in the form of a medicament. This decision tends to prove that in France any concoction of drugs having a therapeutic action on the organism is a pharmaceutical preparation. Consequently it is not necessary, as is sometimes supposed, that a medicament must be specified as a cure for some particular malady. As a matter of fact it seemed that the question to be decided by the Court was: "Should drunkenness be considered as a vice or a malady?" But this little technicality was avoided.

AUSTRIAN PHARMACY IN FINANCIAL STRAITS.—In criticising adversely the financial position of the Austrian Pharmaceutical Society, the Berlin *Pharmaceutische Zeitung* observes: "The remarkable predilection of pharmaceutical societies for expensive scientific and literary investigations is a peculiar feature of our times. The way in which the British Pharmaceutical Society has had a millstone round its neck with its Research Laboratory, as other societies have done with their official publications, is notorious. Nevertheless, in these societies the benevolent funds are secured by statute in such a manner that the moneys pertaining to them cannot be deviated from their proper destination. But the Austrian Society, out of a total expenditure in 1891–92 of 27,348 florins, had only spent 55 florins for the relief of necessitous members, the remainder having gone to defray current expenses. Thus the Pharmacy School, which brought in 4,410 florins, cost 5,987 florins; the establishment for the examination of alimentary substances, with a revenue of 2,354 florins, cost 3,432 florins; and the expenses for the production of the journal were 9,774 florins, against a revenue from that source of 4,822 florins." Details are then given of the present position of the Society, and the manner in which its funds have leaked away. The Food-examination Institute in particular appears to have been a veritable horse-leech's daughter. The Vienna Pharmacy Union, the municipality, and various other organizations and persons have repeatedly given contributions in aid of this luckless establishment, and in the hope to tide it over its difficulties, but all to no purpose, and now the Imperial Government is about to be beseeched to step in and preserve this pharmaceutical Uganda; for the Society, after having within four short years sunk 24,000 florins in the venture, can no longer bear the burden.

Trade Supplement.

The BULLETIN *invites its advertisers and subscribers, and all connected with the drug trade, to send items of information, for these columns, concerning all new departures, products, and facts regarding the general and special trade interests of druggists.*

DR. JAY JOHNSTON has located at Barrett, Wyo., and is now in Chicago, where he has bought a new stock of drugs and sundries for his new store, which he will occupy as soon as his goods arrive. He carries with him the highest recommendation of the medical fraternity of Ann Arbor and Chicago as a surgeon, doctor, and pharmacist. He will have a laboratory and operating-rooms in his new store, and brings a fine set of instruments with him. He will have a large circuit for practice, and will supply the long-felt demand of the coal-miners and other residents.

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THE attention of druggists who desire to minister to the popular demand for life-saving and disease-preventing apparatus—and what druggist does not?—is called to the claims made by Wilmot Castle & Co., of Rochester, N. Y., in reference to their steam sterilizer. It is based on long-established principles in its main feature—that is to say, it attempts to destroy germicidal life by means of continuous heat—but in the application of this principle it introduces a novelty of detail which appears to be at once simple and complete; enabling the operator, for example, in the sterilization of milk, to preserve the palatableness and digestibility of the article while destroying its impurities. The instrument is intended not merely for professional, but also for domestic, use, and will no doubt find a ready sale.

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CANADA.

From the beautifully tiled floor to the ornamental metallic ceiling, and from the large plate-glass windows in front to the pretty mantelpiece in the rear, the new store of Cairncross & Lawrence, London, Ont., is a model of elegance and convenience—a credit to the city and to the enterprise of this well known firm. The interior, for richness of finish, is not surpassed by the finest American establishments; in fact, the visitor was informed that it was designed after the best metropolitan stores, and that a member of the firm had visited the large cities over the border expressly for the purpose of obtaining the ideas which have been so handsomely materialized. The highly polished quartered oak in which it is finished, the shining mirrors, the glittering show-cases, and the almost luxurious ornamentation, impress one with a sense of cost as well as beauty. Messrs. Cairncross & Lawrence have wisely considered comfort as well as style. The requirements of their extensive and growing trade compelled them to seek larger quarters. They have succeeded in making their superb new business abode amply commodious as well as elaborately furnished. It is perfectly arranged; there is a place for everything and everything is in its place.

The bottles and drawers are probably the most complete in the Dominion, the shelves and counters are admirably laid out, the show-cases are of a handsome and entirely new pattern, and there are all the accessories of a well regulated establishment, noticeably a unique cash desk protected by solid glass spindles. In the rear are the finely equipped office and dispensing-room partitioned off. Space will not permit description of all the beauties of the store; they 're "too numerous to mention." One that strikes the eye, however, is the decorative grate in which a bed of glass coals glows with beautiful and varied color in the gaslight. Without doubt, Messrs. Cairncross & Lawrence have the handsomest drug store in the Dominion.

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GEORGIA.

Robt. A. Carson, junior member of the reliable and popular firm of Brannan & Carson, Columbus, Ga., has just returned from a pleasant trip to Florida. Mr. Carson numbers his friends by the score, and everyone knows when Mr. Carson says P., D. & Co. are the best that he is in earnest and really believes it. If you want to spend a pleasant hour, get Mr. Carson to tell you his experience while fishing for torpon on Lake "To-po-ho-po-mal-iga," or while he was in the river "Memphrananogas," or in the swamps "Oophistolotonos." 'Tis great.

Savannah:

Sam. C. Hart, the efficient manager for the store of McCall & Co., has to hurry home nights now and entertain the charming little one who recently made *her* appearance in his home.

W. O'Rear, the popular Broughton-street pharmacist, was very much interested in the recent wheelmen's race week in this city. Mr. O'Rear is quite an expert on the wheel himself.

E. A. Glidden, the *principal man* of Lippman Bros., was very much admired recently while on his wheel going home. His skill in managing his wheel, his rapid riding, etc., are the wonder of Savannah.

All of the druggists here now use the popular horse (bicycle), and very good riders they are, too—Dr. McCall probably being the best.

W. A. Bishop shows that nothing is such evidence of success as success; he has now opened out another store, and both places are being well patronized.

J. T. Shuptrine & Bro. have the sole proprietorship now of one of the best selling patent medicines in this market—namely, "Johnston's Chill and Fever Cure"—and they are selling large quantities of it too.

Mr. Price, of Strong's pharmacy, is an ardent admirer of good drama, and his views on this subject are much sought after.

Solomons & Co. are constantly making decided improvements in their pharmacy, and the genial proprietor, Isaiah Solomon, well deserves his success; he is well surrounded with an efficient force of clerks, and the business they do is of the very best.

R. V. Nottingham "shut up shop" on Washington's birthday and celebrated with "the rest of the boys."

St. Julian Yonge has sold out his beautiful pharmacy to J. A. De Gaugh, formerly of Macon, Ga., a worthy successor and a good business man.

Augusta:

Crauch Bros., composed of two young men of decided ability, have built up a trade here which is paying them very handsomely. The elder member of the firm has in his private office one of the most "unique" telephones you ever saw.

Genial, clever Tom Norman is back at the old stand, Alexander Drug and Seed Co. Than Tom no man in the craft is more popular, and the manager of this concern is to be congratulated on getting him back.

Mr. Wilson, of Howard & Willet, is showing his taste for the beautiful in the many changes that he is making in the retail department of this concern. Mr. Wilson is a man of excellent taste, refinement, and education.

Dr. Robt. H. Land, the "Georgia Nestor in drugs," has recently put on the market some new specialties that are drawing the shekels in. He has the most wonderful recipe for milk (not a malted milk) that he discusses with much energy, showing how well posted he is on this subject and all of its "appurtenances."

J. M. Carter and Dr. Patterson are a couple of gentlemen who will eventually reach a high altitude on fame's ladder, if close attention to business, square dealing, and good goods count for anything in this old world of ours.

Eve's Pharmacy is the name of a new store just started here. The proprietors have launched out a new perfume which they call "Eve's Temptation;" it has met with instant favor all over the city, and they are selling large quantities of it.

Dr. Marks, of Howard & Willet, was once an ardent and interested follower of Æsculapius, but of recent years has turned his talents to the *preparing* of prescriptions for the sick, and the heads of the establishment feel that in Dr. Marks they have a most efficient man.

When it comes to blowing a cornet, Bob Land is the best on earth; when it comes to telling interesting stories, Bob Land can't be beat; when it comes to being clever, genial, companionable, there is none better than Bob; and a better all-round fellow it would be hard to find.

The old and honored drug firm, the Alexander Drug and Seed Store, of this city, are having an elegant new store built, their previous quarters having been completely destroyed by fire a short time since. Under the wise and efficient management of S. C. Durban, this store has attained a very great reputation for honesty and fair dealing. Mr. Durban is a most enthusiastic member of the drug profession.

C. T. Gaetchins can number his friends as legion. No man ever meets Dr. Gaetchins but carries away a sense of feeling that the "cocoanut containing the milk of human kindness" is certainly possessed by Dr. Gaetchins.

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ILLINOIS.

Mac & Vierkoetter still do business at the "old stand" in Mattoon. Their place is headquarters for traveling men, as usual. You will want no better sign that there is business done there.

Weaver's store, under the Dale House, Mattoon, has been laid up for repairs since the fire. It will soon come out bright and new.

Dr. A. A. Washburn, of Tuscola, has taken Dr. W. S. Martin partner in the drug store. But it is still "The Washburn Drug Store," and always at the front.

If Frank Bahnsen is as popular with the ladies as we know he is with the drug trade about Rock Island, you may soon look for a card to the wedding.

You ought to see H. Swannell's store at Champaign since he fixed it up. It looks with the best of them.

Dr. W. R. Nash, of Fairmount, would like to have a good man, registered in Illinois.

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MINNESOTA.

W. G. Alwin, formerly of New Ulm but who for some years past has been manager of Stierle's pharmacy in St. Paul, has purchased the stock and fixtures of the old stand known as the "City Drug Store," from Henningson & Kiesel, and will again call New Ulm his home.

Albert R. Halstead, who for some years past has been engaged in the drug business in South Dakota and Minnesota, has accepted the position as manager of Otto Gerstmann's pharmacy, Morgan, Minn.

Neil Finch, of Tracy, has returned from a pleasure trip to Southern California. He reports a general good time and an improvement in health.

W. W. Salisbury, for some years behind the prescription counter at Minneapolis, St. Paul, and Stillwater, is occupying a similar position at Marshall for Dr. W. S. Eastman.

A physician wishing to locate will find an excellent opening at Balaton, Lyon County. The town has had a good healthy growth of late, and an exceptional opening awaits some good man. Correspondence addressed to Mr. J. A. Moore, druggist, of that place, will receive prompt attention.

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MISSOURI.

Kansas City:

John B. Hutchison, the most enterprising druggist on East Eighteenth street, has refitted his store with new solid-oak fixtures throughout. It makes the neatest and cleanest-looking store to be found anywhere. John is a hustler, and deserves the patronage he now enjoys.

The Brattin Drug and Jewelry Co., Fourteenth and Campbell streets, which was closed up a short time since, has been reopened by A. C. Morrison, he having purchased the entire stock of drugs and fixtures. Mr. Morrison is a competent druggist, and we predict a good business for him.

H. S. McDonald is once again engaged in the drug business and back on his old stamping-ground, having bought out S. C. Van Hook, Independence street and Prospect avenue.

A. H. Rosendahl died of heart-failure Saturday, the 4th inst. He was proprietor of the oldest-established drug store on Minnesota avenue. He leaves many friends to mourn his loss.

J. R. Lewis & Co., late of St. Joe, Mo., have embarked in the drug business in this city, at Tenth street and Euclid avenue.

W. H. Gray, the popular pharmacist at Twenty-fourth street and Forest avenue, has just added to his neat and attractive store a fine, large soda-fountain.

Geo. Eyssel, owner of the largest retail drug store in the city, is spending a few weeks in Hot Springs, Ark.

R. T. Thornton, late of Rich Hill, Mo., is now proprietor of the neat little pharmacy at Fifteenth street and Virginia avenue, formerly owned by C. G. Nickells.

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NEW HAMPSHIRE.

Dr. John C. Parker, Farmington, succeeds W. P. Blake, M.D., in the drug store and practice. Rumor has it that the Doctor will soon take as a partner one of Farmington's fair daughters.

Irving A. Piercy, Rochester, has bought the business of E. W. Emerson & Co. Mr. Piercy has been with R. Dewitt Burnham for some years, and is very popular with Rochester people. This and his well known skill as a pharmacist make his success an assured fact. Henry Hayes remains head clerk, as before. 'Twould hardly be the same store without "Henry."

The W. H. Vickery store, Dover, was recently sold, consequent upon W. H. Vickery's assignment. It was bought by J. Edw. Vickery, who without opposition bid it up to 40 cents on the dollar. "Ed" will renovate the store this spring, and push the business "for all there is in it." W. H. Vickery's assignment was rendered necessary by unfortunate speculation in other business. He has the sympathy of all who know him.

J. D. Russell, Nashua, has bought the "Harwood" store on Canal street, and will conduct it as a first-class pharmacy.

The successful candidates in the recent examination by the Board of Pharmacy are: Clarence M. Plummer, of Lakeport; Thos. J. Hill, Laconia; Earl F. Green, Boston; Thos. H. Winslow (with A. Perley Fitch), Concord; Harry B. Buxton (of Buxton & Johnson), Goffstown; Walter N. Abbott, of Warner; Ben B. Sloan (with Dr. Parker), of Farmington; Ben O. Aldrich (with Bullard & Shedd), of Keene; Walter N. Whitney, of Henniker; and Carl E. Rydin (with John B. Hall), of Manchester. All licensed as "skilled pharmacists." Also "druggists' assistant" licenses to L. Eugene Brown, of Nashua, and Herman G. Pehlman, of Manchester.

W. S. Scruton, the popular druggist of Hillsboro Bridge, has been appointed an aide on the Governor's staff, with the rank of Colonel. "Everybody takes their hat off!"

Portsmouth:

A. P. Preston is making extensive improvements in his store, which when completed will make it one of the handsomest in the State. The finish will be white throughout. Mr. Preston is now in Chicago arranging for the exhibition of "Preston's Specialties" at the World's Fair.

Benj. Green has improved his store and gained much room by putting show-case fronts on his counters. When his improvements are completed the summer visitor will scarce recognize the old Thacher store; but the face of the genial proprietor will be recognized as the same that has smiled on them from behind the counter for so many years.

Too few druggists go in for athletics. An exception is E. "Goody" Philbrick, proprietor of the David Kimball & Co. pharmacy; he wears two medals won in the road races of the Portsmouth Athletic Club. Goody is a "pusher" in business as on the pedals.

Wm. D. Grace has "managed" another improvement by which he has added several hundred feet of shelving to his store. By this means he accommodates his line of Parke, Davis & Co.'s pharmaceuticals, in which he is developing a large business.

Manchester:

The contemplated rebuilding of the City Hall obliges J. J. Holland to seek temporary quarters elsewhere. John dons his coat and starts house-hunting whenever a "drummer" appears, especially if the sample case looks like "cigars."

"Ned" Smith has nearly completed the extensive repairs which have occupied his whole attention for the past three months. The improvement is great, and "Ned" is justified in remarking that he'll have a store "that I can do some business in!" And he will!

Baril & Richards succeed W. J. Poirier at 1104 Elm street. The store begins to look Barilish, and the genial "Joe" is once again building up a successful business as only he can do it.

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NEW YORK.

A very popular and well-equipped drug house in the Mohawk Valley is the one owned and managed by N. C. Becker, of the city of Amsterdam. Mr. Becker recognizes the necessity of carrying a complete line of pharmaceuticals that he may command and hold the custom and patronage of the physicians of the town and adjacent villages. He is ever alert to the advancement made from time to time in this line, and because of this he enjoys a very large and lucrative business. Personally he is very active and attentive to business, and holds an enviable reputation in the social and business circles of the community. Mr. Becker has been in the drug trade in Amsterdam for the past twenty years, occupying his present beautiful store on Market street since he built it, about ten years ago. An acknowledged important factor in a man's success, at the head of a large business, is the care and good judgment shown in the selection of his assistants. In this particular Mr. Becker has been indeed most fortunate in securing the services of a capable and reliable pharmacy graduate in the person of Dr. J. B. Robinson. This gentleman has been Mr. Becker's assistant for the past seven years. His thorough knowledge of the business and his social qualities make him a great favorite with the medical profession of the community. Dr. Robinson is a graduate of the National College of Pharmacy, of Washington, D.C. He was president of the class of '78, and its valedictorian. This is the only college of pharmacy having authority to confer the degree of Doctor of Pharmacy in the United States, and such authority was granted by a special act of Congress.

Brooklyn:

H. M. Boardman recently purchased the store, corner of Broadway and Halsey street, formerly owned by Henry Asher. The store is being thoroughly renovated and stocked, and will be ably managed by M. Mitchell, assisted by J. J. Watson.

Henry Asher, having sold his store to H. M. Boardman, became homesick for the drug business. He has purchased the store, corner of Putnam avenue and Irving place, owned by Ferry & Co., where he will continue to dispense as of old.

The smiling countenance of Andy Shields will be missed from the store of J. Campbell, 212 Hoyt street. "Andy" has purchased a store near the navy yard. That he may prove successful, is the wish of his many friends.

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NORTH CAROLINA.

James McKimmon, one of the leading druggists of Raleigh, died Feb. 6th.

A number of drug clerks of the State met at Greensboro on March 2d, and formed a Drug Clerks' Association.

J. L. Prior, who has been clerking for James I. Johnson, of Raleigh, has taken a position as traveling salesman for Sharpe & Dohme.

There will soon be a chair of pharmacy established at the University at Chapel Hill.

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OHIO.

George C. Himmelman will move into his new store in the Schumacher block on South Main street, Akron, about April 1st. The fixtures in the store were made by Bangs, and will be the finest in this part of the State.

Inman Bros., Akron, are about to build a new store, for their drug department exclusively.

Zickez & Walz, Cleveland, succeed N. O. Newcomb, at the corner of Lorain and Pearl streets.

J. A. Sumner succeeds Theo. Claus at 657 Pearl street, Cleveland. Mr. Claus has been in poor health for some time, and will leave for California in March.

Will Neer, of Norwalk, has purchased the store of F. D. Felt, Wellington.

A. H. Van Gorder, of Benton, Myers & Co., Cleveland, is taking a vacation, and with a party of friends will spend some time in Bermuda. We wish Mr. Van Gorder a delightful visit to the Bermudas and a safe return, and have no doubt that with his increased vigor and vitality he will on his return make his competitors hustle for the trade.

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SOUTH DAKOTA.

E. N. Aldrich, of Brookings, who suffered a very heavy loss by fire on the 22d of last December, has moved directly across the street from the old stand, and by the time this appears in type he will be again open for business. At present Mr. Aldrich is going through the disagreeable task of trying to settle with the insurance companies that have for the past number of years taken his hard-earned money, and now, when this heavy loss comes to him, lay every stumbling block possible in his way to a settlement. Brother druggists, look well out that you are in the right companies. Mr. Aldrich, however, has a supply of the true Western grit (commonly called sand), and will live to give the citizens of Brookings and the surrounding country the thorough service he has given them in the past.

E. M. Holmes.

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INDEX OF CONTENTS.

Editorial. PAGE

E. M. Holmes.......... 145
Aids to the Adoption of the Metric System in Prescription-Writing.... 147
Forty-first Annual Meeting of the American Pharmaceutical Association.......... 149
National Wholesale Druggists' Association.......... 150

Original Articles.

PRACTICAL PHARMACY.

A Few Remarks. By an Old Bachelor.......... 151
Receiving and Unpacking Apparatus. By Thomas Warwick.......... 152
Therapeutic Notes of Interest to Pharmacists. By Dr. H. M. Whelpley, Ph. G.......... 154

CHEMISTRY.

"Chemically Pure." By Dr. Otto N. Witt.......... 157

BOTANY AND MATERIA MEDICA.

The Medicinal and Economic Uses of Sea-Weed. By P. L. Simmonds, F. L. S.......... 159
Answers to Correspondents.......... 161
Thymacetin.......... 161
Nut Cracking.......... 162

Correspondence.

London Letter.......... 163
Paris Letter.......... 164
Berlin Letter.......... 166
Chicago Letter.......... 167
New York Letter.......... 167
An Appeal for Co-operation in the Study of Insects.......... 168
American Pharmaceutical Association—Officers, Committees, etc., for 1892-93.......... 169
Imports of Drugs, etc., at the Port of New York, for the Month of March, 1893.......... 170
Book Reviews.......... 171
Facetiæ.......... 172
Abstracts and Translations.......... 174
Pharmaceutical Progress.......... 179
Notes and News.......... 184
Trade Supplement.......... 189

E. M. HOLMES.

The Curator of the Museum of the Pharmaceutical Society of Great Britain must be a person of interest to all pharmacists who have any regard for the scientific side of their calling. Those who know of Mr. Holmes only through his contributions to pharmaceutical literature will feel interested in him because of the number and value of those contributions. But those who have held converse with him, even though only once, will feel the interest of a friend, because of the ready kindness and geniality which Mr. Holmes displays to all who seek his assistance in any branch of knowledge with which he is acquainted.

Edward Morell Holmes was born in January, 1843, at Wendover, a small village in Buckinghamshire, at the foot of the Chiltern Hills. His father is a Congregational minister of Huguenot descent, and is related to the Morell family, from which sprang the well known grammarian J. D. Morell. Young Holmes was educated at the Grammar School, Boston, Lincolnshire, and subsequently at the Grammar School at Wimborne (Minster), Dorset. From his earliest years he exhibited a great fondness for flowers. His ambition was to engage in the calling of a florist. This idea, however, does not appear to have commended itself to his father; for at the age of 14 he was apprenticed to a chemist in Cheyne Walk, Chelsea. Here he must have fully availed himself of his opportunities, as three years later, being only 17, he succeeded in passing the minor examination of the Pharmaceutical Society. Pharmacy did not choke botany; prosaic business did not smother science; Holmes's continued attachment to the flowers was shown by the gaining in 1863 of the bronze medal of the Pharmaceutical Society in the Herbarium competition. In the following year (1864) he competed for the Pereira medal, the blue ribbon of English pharmacy, with the result that he was one mark below the prize-man.

After passing his minor examination, Mr. Holmes engaged himself as assistant to one of the leading chemists at Plymouth. From Plymouth he went to London to a similar position, but after qualifying as a pharmaceutical chemist he returned to his former employer at Plymouth. In the latter place he subsequently established a business of his own, and while engaged in its superintendence he found leisure to take up the study of mosses, lichens, liverworts, and marine algæ. It is with these lower members of the vegetable kingdom that Mr. Holmes's name will always be associated by botanists. His acquaintance with these lowly plants, begun at Plymouth, has become closer and closer with succeeding years, until at the present time it is questionable whether there is another British botanist who is as familiar with the mosses, fungi, lichens, and marine algæ, as Mr. Holmes. During his residence at Plymouth he published, in conjunction with Mr. F. Brent, a list of the "Mosses of Devon and Cornwall;" this was succeeded by the "Scalemosses of Devon and Cornwall," and the "Lichens of Devon and Cornwall." His zeal in the prosecution of his favorite study was intense. It was no unusual thing between February and August for his walks before breakfast to make an aggregate of one hundred miles a week. Some of his rarest specimens were gathered as early as three o'clock on a raw February morning, by the aid of a bull's-eye lantern, at a distance of six miles from home—conditions calculated to damp the ardor of any collector less enthusiastic than Mr. Holmes.

In 1872 he went once more to London, and out of twenty-five candidates was elected Curator of the Museum of the Pharmaceutical Society of Great Britain, upon the recommendation of Sir J. Hooker, W. Carruthers, F.R.S., Dr. M. C. Cooke, and others. From that time to the present, a period of twenty years, Mr. Holmes has been a voluminous contributor to the literature of systematic botany and pharmacognosy. His botanical papers have appeared in the *Journal of the Linnean Society*, the *Journal of Botany*, *Grevillea*, and in the *Annals of Botany*. At the suggestion of Mr. T. J. Hanbury he undertook to work up the cryptogamic flora of Kent, and the results of this investigation were published in the *Journal of Botany* during the years 1877 and 1878. He was requested to re-write the descriptions of the marine algæ for Sowerby's "English Botany." The labor which this entailed was exceedingly great, in consequence of the continual discovery of new species. After ten years' work, Mr. Holmes, when ready for publication, found that the publisher was averse to incurring the increased expense, there having been added to the number previously enumerated by Harvey no less than one hundred and fifty species new to Britain—about half of these had been discovered by Mr. Holmes himself. A revised list of the British marine algæ was, therefore, published by Mr. Holmes, in conjunction with his friend and pupil Mr. E. A. L. Battero, in the *Annals of Botany*. The work done in this direction by Mr. Holmes has had the effect of causing both biologists and systematic botanists to give increased attention to the study of British algæ. He is also the author of a "Botanical Note-book," having a decidedly original arrangement, and a small popular work on British Fungi.

In the estimation of pharmacists Mr. Holmes's reputation will rest upon his pharmaceutical papers. A large proportion of the articles upon drugs and allied subjects in the *Encyclopædia Britannica* are from his pen. To the *Pharmaceutical Journal* he has contributed considerably over a hundred articles. How much richer Pharmacognosy is for the precise knowledge Mr. Holmes has published at various times, it is not possible to estimate. In his writings he has laid under contribution Portuguese, Dutch, French, German, and Spanish authors; he has written articles on Brazilian drugs, Morocco drugs, American medicinal plants, medicinal plants of Liberia, medicinal plants used by the Cree Indians, and Madagascar drugs. In many cases his work has consisted in the thankless task of unraveling the tangled statements of other writers. An instance of this occurs in the papers dealing with the asafœtida plants, concerning which but little reliable information could be obtained in consequence of their involved synonymy. Mr. Holmes undertook the work of reviewing the published descriptions of all these plants, and in his papers furnished a clear statement of their distinctive individual features. What he has done for this subject he has also done for many others; he has brought together scattered information, reconciled discrepancies, and elucidated doubtful points, thus clearing the ground for subsequent workers in the same field. His knowledge of systematic botany, combined with his extensive knowledge of drugs, has enabled him to make this department or science peculiarly his own. The application of botany to the needs of materia medica is well exemplified in "The Natural History of Scopola Carniolica" (*Pharm. Journ.* [3] xx, 468), in which we find traced out the synonymy of this plant from the first mention of it by Maltioli in 1563 down to the present day; the whole of the literature dealing with its two varieties, and with two other species of the same genus, is also carefully reviewed.

Mr. Holmes's acquaintance with drugs is not simply a museum-acquaintance. He is familiar with them as they appear in the London markets. His article on "Opium" in the *Encyclopædia Britannica*, which contains the best account of its commercial varieties that has ever been written, abundantly testifies to this.

Upon the retirement of Prof. Bentley from the chair of Botany and Materia Medica in the School of Pharmacy, London, Mr. Holmes undertook the charge of the materia medica classes for a short time. As a lecturer he was not so decidedly successful as might have been expected from his extensive acquaintance with his subject and from the clearness with which he expresses himself in public. Possessing exhaustive knowledge concerning the drugs he had to describe, he endeavored to impart too much of it to his pupils, failing to make allowance for the slow receptivity of the average mind. His lectures were too advanced for the majority. In the revision class Mr. Holmes was seen to the greatest advantage. Here in the quietness of the class-room, coming into individual contact with the men, his genial nature and ready knowledge were quick to apprehend their difficulties and to explain them away. His personal influence over the men who were privileged to attend those classes was very great, and there is reason to believe that to-day it is diffusing itself far beyond the narrow circle in which the first impressions were made. Especially anxious to assist the earnest student, Mr. Holmes was correspondingly severe towards the man seeking for examination wrinkles; such an one would, in answer to his inquiries, receive for a reply: "I am not here to answer prospective examination questions."

Mr. Holmes's conscientious industry appears nothing less than marvelous to those who for the first time have a glimpse of his daily life. At his charming place at Seven Oaks, one of the loveliest neighborhoods in lovely Kent, he rises early, and, if the season be summer, goes into the garden to visit his fruit trees and his heterogeneous collection of medicinal plants—he has living specimens of every medicinal plant of importance that will bear the English climate. During breakfast he rapidly scans his budget of letters, which usually includes epistles from algologists in distant parts of the world. Before his departure for the city (London) he leaves instructions with his wife, who is his right hand in all his purely scientific work, concerning the work to be done by his assistant during the day in the preparation of his seaweeds. Until the evening his time is now devoted to his multifarious duties as curator. His correspondents reside in every part of the habitable globe, and from them he is daily receiving drugs for recognition and examination, and problems for solution. After a busy day's work he returns home—but not to rest; he examines the specimens which have been prepared in his absence, naming and placing in his collection those which are suitable, storing away the duplicates, making lists, comparing specimens and descriptions, and in other ways working out the classification of his beloved sea-weeds.

Mr. Holmes is a man of sound culture and wide sympathies. In science he does not confine his attention to botany, but has interested himself in British conchology and other branches of natural history. He is a most interesting and entertaining companion and a choice friend. He is a Fellow of the Linnean Society, and was a member of the Council from 1882 to 1885; he is a Fellow of the Royal Botanic Societies of Edinburgh and London, and local secretary of the former society. He has also been elected an honorary member of the Philadelphia College of Pharmacy, of the New York College of Pharmacy, and of the Society for the Furtherance of Industries at Haarlem. In consequence of Mr. Holmes's intimate acquaintance with cryptogamic botany, he is in great request among the numerous natural-history societies of Great Britain, being connected with the more important ones, including the celebrated Essex Field Club, as an honorary or a corresponding member.

WILLIAM KIRKBY.

AIDS TO THE ADOPTION OF THE METRIC SYSTEM IN PRESCRIPTION-WRITING.

Eli H. Long, M.D., Adjunct Professor of Materia Medica and Therapeutics, University of Buffalo, Professor of Materia Medica, Buffalo College of Pharmacy, contributes to the *Philadelphia Medical News*, March 25, 1893, the following suggestions concerning this interesting subject:

The question of the practical use of the metric system by physicians is coming at the present time to assume considerable importance. We are upon the eve of the issue of the new United States Pharmacopœia, in which all quantities will be expressed in metric terms, a feature that was adopted after full and free discussion by the representative physicians and pharmacists who composed the pharmacopœial convention. This step in advance will never be retraced; therefore, the sooner we take our stand accordingly the better.

Enough has been said in discussion of the new system, and the verdict seems to be that it is unquestionably superior to any other, mainly because it is simpler. This paper therefore takes for granted the desirability of its more general use, and aims to meet practically some of the difficulties and objections that stand in the way of its adoption.

The chief difficulty lies in the fact that we do our thinking in the system of weights and measures most familiar to us, so that all, except those who have early and thoroughly learned the metric system, must practically do their calculating for a time in the old system. The practical American sees little utility in a system that requires a mental translation at every turn; hence the indifference to the superiority of the metric system among the members of our profession.

I am convinced that in order to meet this difficulty we must simplify the relation between the two systems so as to reduce to a minimum the necessity of translation and calculation. And so effectually can this be done that to master the application of the metric system to prescription-writing need be a matter only of a very few moments' thought, even to those who have employed the old system for years. The plan here given has, by extensive use in class-work, been found fully adequate.

We begin by making the number of doses in our prescription correspond to the number of grains in a gramme. As there are between *fifteen* and *sixteen* grains in a gramme, either of these numbers* can represent the whole number of doses. This being determined, we find that the *same figure* that expresses the *single dose* of any ingredient *in grains* expresses also its *total quantity* in *grammes.* The following will illustrate this, the same rule obtaining as well with *minims* in relation to *cubic centimeters:*

		Grammes or c. c.	
℞	Potassii bromidi (single dose 10 grains).....	10	
	Morphinæ sulphatis (single dose ¼ grain)...		25
	Spiritus ætheris nitrosi (single dose 30 min.).	30	
	Aquæ q. s. ad (16 teaspoonful doses)........	60	

M. Sig., etc.

Observing the cardinal rule that the number of doses shall equal the number of grains in a gramme, or of minims in a cubic centimeter, we find that sixteen 10-grain doses amount to about 10 grammes; sixteen ¼-grain doses amount to about ¼ or 0.25 of a gramme; sixteen 30-minim doses amount to about 30 cubic centimeters. When the single dose is a fraction of a grain the latter requires simply to be expressed in decimal form under the same rule.

The simplicity of the plan appears at once. It is necessary only to determine the single dose of any ingredient in grains or minims, and write the number down as expressing the whole quantity in grammes or cubic centimeters. It follows that, instead of being a difficult system to use, the metric system requires much less effort than writing according to the old system, for the reason that calculation and multiplication of doses are entirely done away with.

Sixteen doses are quite sufficient in most cases for one prescription, and the quantity of the dose, whether a teaspoonful, a dessertspoonful, or a tablespoonful, is immaterial so long as the number of doses is the same. If, however, it is desired to order twice the number of doses, it simply requires to double the number expressing the quantity in case of each ingredient; or, if half the number of doses is wanted, to order one-half of the quantities which the rule would give.

Another objection sometimes offered is that the bottles in present use are not of proper sizes for convenient metric quantities. But the plan here advanced would exactly suit the present sizes of bottles: thus, sixteen teaspoonful doses will make two fluidounces; sixteen dessertspoonfuls, four fluidounces; and sixteen tablespoonfuls, eight fluidounces.

In prescribing powders or pills the same rule applies as for fluids—for example:

		Grammes or c. c.	
℞	Pulveris ipecacuanhæ et opii (single dose 5 grs.).	5	
	Pulveris digitalis (single dose 1 grain)..........	1	
	Strychninæ sulphatis (single dose $\frac{1}{50}$ grain).....		02

Misce et divide in chartulas numero xvj.

The ordering of fifteen or sixteen doses always establishes the relation between the two systems, which permits us to apply the rule that has been demonstrated and which may be fully stated thus:

1. *Make the whole quantity to consist of sixteen doses;* then, 2. *The number that represents the single dose of an ingredient in grains or minims will express the required quantity of that ingredient in grammes or cubic centimeters.*

It may be objected to this rule that it does not render one independent of the old system. This is true at first, but in learning a new system of any kind the most effectual way is to come practically into contact with it. This is what we accomplish by thus linking the two systems together, and the result must be that we soon acquire a familiarity with the simpler, new system, and the ability to use it independently will be only a matter of time.

Another objection to the use of the metric system—one that may be valid as applied to some sections, but which must be regarded as much an excuse as an objection when applied to cities—is that some risk of error is incurred on account of dispensing pharmacists being unfamiliar with the system. This objection is met by the fact that the handbook of the pharmacist, the new United States Pharmacopœia, is to employ the metric system exclusively—which fact gives evidence that the pharmacal profession is fully abreast if not in advance of the medical in respect to the matter under consideration; otherwise the Pharmacopœia would hardly show this advance. Indeed, if the comparison be a fair one, we shall find among representative pharmacists and physicians more pharmacists than physicians practically conversant with the metric system.

Therefore, and in cities especially, no one need fear to send a prescription in metric terms to any *first-class* pharmacy.*

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*One gramme equals 15.43 grains, while one cubic centimeter measures 16.23 minims. Therefore, if one number is adopted for both liquids and solids, 16 is the better one. In case of ordering pills, powders, or other solids, 15 would be more nearly accurate.

*Professor Long in 1891 prepared a work entitled Tables for Doctor and Druggist, comprising Tables of Solubilities, Reactions, and Incompatibles, Doses and Uses of Medicines, Specific Gravity, Poisons and Antidotes. In this the doses are indicated in both metric and apothecary systems. A new edition of this book, with revision to date, will be issued in August, 1893; in it the author adds a helpful chapter on "Aids to the Adoption of the Metric System." The timeliness of this second edition will be rendered apparent by the simultaneous appearance of the new Pharmacopœia. In the advertising department of this number of the BULLETIN will be found information as to its publisher and price, and medical and pharmaceutical press opinions of it.

FORTY-FIRST ANNUAL MEETING OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

This meeting is held this year at Chicago, August 14th to 19th, the first general session opening on Monday, August 14th, at 3 o'clock.

The programme, as issued from the office of the local secretary, Chicago, is as follows:

Monday, August 14th.—10 A.M., council session; 3 P.M., first general session; 8:30 P.M., reception to members of the A. P. A.

Tuesday.—9 A.M., second general session; 3 P.M., Section on Commercial Interests, Section on Scientific Papers; 9 P.M., Section on Commercial Interests, Section on Scientific Papers.

Wednesday.—Visit to the Exposition.

Thursday.—9 A.M., Section on Scientific Papers; 3 P.M., Section on Education and Legislation; 8 P.M., Section on Education and Legislation.

Friday.—Visit to the Exposition.

Saturday.—9 A.M., final session; boat ride on Lake Michigan.

Sunday, August 20th.—Rest.

Monday.—10 A.M., World's Congress of Pharmacists; 8:30 P.M., reception to foreign guests.

Tuesday.—10 A.M., International Pharmaceutical Congress.

Wednesday.—10 A.M., International Pharmaceutical Congress; 8:30 P.M., banquet.

Thursday, August 24th.—10 A.M., International Pharmaceutical Congress.

To accomplish the work of the Association successfully, it was deemed best to open the annual meeting on Monday. On Tuesday simultaneous meetings of the sections on Commercial Interests and on Scientific Papers have been provided for, in order to give members an unbroken day on Wednesday at the Exposition. The week following the sessions of the A. P. A. will be devoted to the interests of the World's Congress of Pharmacists and the International Pharmaceutical Congress.

The World's Congress of Pharmacists is one of the many scientific congresses inaugurated under the auspices of the World's Columbian Exposition, and will present for discussion the relations of pharmacy to the medical profession, the chemist, the botanist, and the public in general.

The Seventh International Pharmaceutical Congress, which has been invited by the American Pharmaceutical Association, will convene under the auspices of this Association. Its deliberations are confined chiefly to subjects pertaining to pharmaceutical education and legislation and the revision of pharmacopœias, with special reference to internationalism. Its sessions will be conducted in the English language, but the proceedings are published in German, French, Spanish, and English.

The foreign members in attendance at these two congresses will be considered guests of the American Pharmaceutical Association.

The Illinois Pharmaceutical Association will hold its annual meeting August 16th and 18th, and its members will be pleased to exchange greetings with their brethren and assist in entertaining them.

By courtesy of the World's Congress Auxiliary, the place of meeting of the American Pharmaceutical Association and the two congresses will be in one of the assembly rooms of the new Art Palace building on Michigan boulevard, opposite Adams street, in the very centre of the city, while the I. P. A. will meet in the Illinois State building within the Fair Grounds.

It will be the aim of the Committee on Arrangements to bring this large gathering of pharmacists socially together, entertain them pleasantly, and thus make these conventions profitable and interesting. It therefore extends its cordial invitation not only to every member, but to every pharmacist in the land, and expects an attendance unprecedented in the annals of the American Pharmaceutical Association.

The greatest attraction, however, will be the World's Columbian Exposition, which promises to be the grandest event of its kind ever witnessed. Its portals and palaces of the highest architectural beauty, clad in pure white, will present to the visitor a magnificent aspect, as if Athens and Rome had risen from their ruins in all their classic majesty and splendor.

Of special interest to all members will be the exhibits in the pharmaceutical and chemical departments; the many new apparatus and devices in the various branches of technical arts and industries so closely related to pharmacy, and the botanical and pharmacological specimens brought here from all quarters of the globe, will be especially instructive, and will furnish the object lesson of a lifetime and be of inestimable value to all.

If it is your intention to visit the World's Fair, attend the meetings, and remain in Chicago one or two weeks or longer; and if you desire to make suitable arrangements for hotel accommodations, the local secretary will be pleased to give you every information. The Directors of the World's Columbian Exposition have created an official Bureau of Public Comfort, whose coöperation the local secretary has secured, and with its assistance he will be enabled to place you and your friends as comfortably as possible.

He furnishes an application which should be filled out and returned to the local secretary at your earliest convenience. Although the facilities of Chicago are considered sufficient to meet the demand for satisfactory accommodations, at the same time it is, as always, advisable that parties should secure their rooms at earliest possible date. Each application will be attended to in the order received. Rooms will be immediately secured in apartment hotels, flats, or private houses, according to instructions. Please state also as to location preferred, whether in immediate neighborhood of the Exposition, near the centre of city, or in some suburb with convenient access to the grounds; also mention how many of your friends wish to club together in any one hotel, and how many ladies will accompany you. Rooms cannot be engaged for less than one week. To secure accommodations in advance, the full amount must accompany your application, either by bank draft, registered letter, express, or money order.

As soon as your rooms are secured, the local secretary will send a rental certificate, testifying to the sum deposited. This certificate contains the address and location of your rooms, and entitles you to the possession of the same from and until the dates as stated thereon. These certificates are made transferable upon due notice to the local secretary.

These arrangements are for accommodations on the European plan—for rooms only. Meals may be had from day to day wherever it may suit your convenience, at hotels, restaurants, or elsewhere. Ample provisions for meals and lunches are made within the Exposition grounds, and the constantly increasing list of restaurants all over the city will more than double these facilities.

All correspondence should be directed to the local secretary, enclosing return postage: Henry Biroth, Local Secretary, Rooms 1111 and 1113, "The Schiller" Building, 103–109 Randolph St., Chicago, Ill.

A circular of the A. P. A., giving programme of the Association during the World's Fair, has been mailed to every member.

The principal object of the work of the local secretary will be the securing of suitable accommodations for the members. This is no easy task, by any means, and can be facilitated only by a prompt communication with him.

The meetings will be held when the influx to the World's Fair will be at its height and the city crowded to its utmost capacity. It is necessary, therefore, to impress on the minds of those contemplating a visit to the World's Fair and attendance at meetings of the Association, that applicants *who come first will be served first*, and, as it will entail considerable labor, applications for rooms should be forwarded at as early a date as possible.

At rooms 1111 and 1113 Schiller building, 103 to 109 Randolph street, pharmacists can obtain all necessary information relating to meetings of the Association and World's Fair matters.

A circular of the Bureau of Public Comfort, which is under the control of the Directors of the World's Columbian Exposition, whose coöperation has been secured, will give you information in detail regarding the plan which the Association's Committee of Arrangements has adopted. This may be obtained from the secretary by readers of the BULLETIN.

In our correspondence columns we give the officers of the Association, members of the council, officers of the council, and all the standing and special committees.

No previous convention of the American Pharmaceutical Association has had to transact business of such importance and of such wide-reaching significance as that which the coming convention will have upon its hands.

All the sections have vital and practical problems to decide in the interests of science, commerce, pharmaceutical education and legislation, the revision of the Pharmacopœia, transportation, prevention of cutting, etc.

It will afford the opportunity of a lifetime to exchange opinions and sentiments of international importance.

With a large and enthusiastic attendance, the conferences will tend to the achievement of a uniform international Pharmacopœia, and advances in all lines relating to scientific work in medicine, pharmacy, materia medica, chemistry, and the arts.

Let us all hope and work for the promotion of knowledge in the arts and sciences which are for humanitarian purposes and the evolution of the coming race which may be able to live longer and happier for the knowledge that comes with experience, original research, and persistence, which have already accomplished marvels in this mundane sphere.

NATIONAL WHOLESALE DRUGGISTS' ASSOCIATION.

President James E. Davis, of the Association, has issued the following notification to the members with reference to the date of meeting:

It has not been customary at so early a day to notify the members of the National Wholesale Druggists' Association of the date of the annual meeting.

This year, however, is a peculiar one, on account of the World's Fair, and the fact that the next annual meeting will take place in Detroit, which is only 284 miles from Chicago, or about six hours' ride by railroad.

As many members of the Association undoubtedly intend "to kill two birds with one stone," and take in the National Wholesale Druggists' Association meeting as well as the World's Fair at the same time, the Committee on Arrangements and Entertainment, approved by the Board of Control and the President, have named September 11th to 14th, inclusive, as the date of the next annual meeting to be held in Detroit.

This will give druggists ample opportunity to close their previous month's business before leaving for Detroit, and also allow them ample time to see the World's Fair in Chicago, and to return to their places of business before the beginning of the following month.

As many members are now very desirous of making their arrangements and securing accommodations to see the World's Fair, it was considered necessary to notify the members at this early day.

PRACTICAL PHARMACY.

A FEW REMARKS.

BY AN OLD BACHELOR.

A Southern pharmacist recently encountered a forcible reminder that peroxide of hydrogen should be stored in a cool place. A bottle of the liquid placed upon an upper shelf, in a warm atmosphere, exploded with terrific force, shattering several bottles which happened to stand near it, and creating considerable excitement. * * * Most manufacturers affix a label to each container directing that the preparation be kept in a cool place, but, as a rule, pharmacists are inclined to overlook such commonplace instructions.

⁂

While you are on the alert for danger from other sources, don't forget that the generator of your old reliable soda-water apparatus can "bust."

⁂

Of course we have all heard of "filthy lucre," but we didn't realize it was so bad until the *Medical Record* announced the discovery of many thousand microbes on both foreign and domestic bank-notes. Microbes of diphtheria, scarlatina, etc., were present, but the great majority of the creatures were regarded as belonging to a peculiar type, for which the name "bank-note bacillus" is suggested. The discoverer believes the bank notes of small denominations are a sure medium for the migration of bacteria. * * * These same bank notes still appear to be in active demand, however.

⁂

"The man who keeps his mouth shut never has to eat much crow."

⁂

The Bookkeeper states that the following are facts: * * * The poet Tennyson could take a worthless sheet of paper, and by writing a poem on it make it worth sixty-five thousand dollars.—That's genius. * * * Vanderbilt can write a few words on a sheet of paper, and make it worth five million dollars.—That's capital. * * * The United States can take an ounce and a quarter of gold, and stamp upon it an "Eagle bird" and make it worth twenty dollars.—That's money. * * * The mechanic can take material worth five dollars and make it into a watch worth one hundred dollars.—That's skill. * * * The merchant can take an article worth seventy-five cents and sell it for a dollar.—That's business. * * * A lady can purchase a very comfortable bonnet for three dollars and seventy-five cents, but she prefers one that costs twenty-seven dollars.—That's foolishness. * * * The ditch-digger works ten hours a day and shovels three or four tons of earth for two dollars.—That's labor. * * * The editor of this paper could write a check for eighty million dollars, but it would not be worth a nickel.—That's rough.

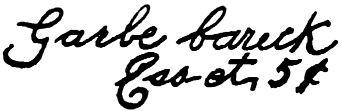
⁂

"One man can start an avalanche that thousands cannot stop."

⁂

As the fly season approaches, pharmacists should see to it that customers receive some precautionary instructions, either printed or verbal, with each purchase of "poison fly-paper." Last year several deaths resulted from young children drinking the sweetened arsenical liquid conveniently placed about the house by thoughtless housekeepers.

⁂



Garbe barick
Cas-et, 5¢

The above is a true copy of an order received by a Detroit pharmacist recently. The requisition was written in pencil marks upon a fragment of coarse paper. * * * Five cents' worth of carbolic acid was supplied.

⁂

Antipyrin is said to form an oleaginous mixture with chloral hydrate and with sodium salicylate.

⁂

The following history of a physician who advertised appeared in the *Doctors' Weekly:*

> A physician sits in his office chair,
> And there broods on his face a look of care
> While he groans and wails and tears at his hair.
>
> "Alas! and alas! and alack!" he cries;
> "Surely fortune and fame would both arise
> If Old Ethics would let me advertise."

At last a bright thought comes into his brain;
Says he: "I must try that old racket, 'tis plain;
It worked O. K. once, and I'll work it again."

He wrote half a page on "The Evils of Pork,"
And the case of a man who swallowed a cork
And a spoon and a knife, but got stuck on a fork.

The newspapers all extended their thanks;
He opened accounts at the various banks;
He'd baited with Ethics and caught all the cranks.

⁂

"Chance is one thing, wisdom is another. The wise person is not the one who gets the opportunity, but the one who knows the opportunity when he gets it and takes advantage."

⁂

In offering sundries for sale, it is usually good policy to commence by showing cheapest grades first. * * * A customer usually feels inclined to apologize for purchasing a cheap article after you have commenced by offering expensive grades.

RECEIVING AND UNPACKING APPARATUS.

BY THOMAS WARWICK.

There are three great secrets of success: To know what you want, to get it, and to make proper use of it. It is difficult to say which is the most important of the three, for if one is missing the value of the others is greatly impaired.

It is my object in the present paper to give directions for receiving and unpacking soda-water apparatus—for as the month of May approaches, the druggist who has purchased new apparatus or machinery, or who has traded his old outfit for a larger one, will find himself somewhat perplexed by the various problems which present themselves when it comes to transferring the apparatus from the packing-cases to the drug store.

And first of all, before entering into technical details, there is one contingency that frequently arises—the charges for transportation are so high as to completely stagger the druggist, and make him wonder as to whether or not he ought to pay the price demanded.

If the druggist has been wise, and has ordered his goods well in advance, his best plan is to refuse to take the goods unless the freight charges are reduced (that is to say, if he has good reason for believing that there has been an overcharge in freight rates). If, however, as is usually the case, the pharmacist has put off ordering until the last minute, and needs his goods at once, he would better pay the rate demanded, under protest, and at once make a claim for overcharge on the office of the transportation company in the city from which the goods were shipped. The manufacturers who sold the goods will in most cases be willing to make the claim; but if not, all that is necessary is to send the company (at the office from which the goods were shipped) the bill of lading and receipted freight bill, together with a statement of the case, and a claim for overcharge. If you are really entitled to a reduction, according to the company's printed tariff list, you will in all probability obtain it, but it is difficult to know beforehand what will be the outcome of the case, for the senseless classifications adopted by the railroads leave even the employés in doubt as to what rates to charge for certain articles. Thus, marble dispensing-apparatus are billed at first-class rates, and sometimes even at double first-class rates, while if taken apart and shipped as marble slabs they can sometimes go at fourth-class rates. In like manner portable fountains, if shipped as soda-water apparatus, pay first-class rates, but if sent as iron retorts pay only fourth-class. Everything seems to depend upon the name given the object shipped; and I have known a man who wished some glass siphon bottles, to order the heads taken off and shipped separately in a small box, while the glass bottles were filled with marble-dust and shipped thus as marble-dust at perhaps one-fourth the rate they would otherwise have been obliged to pay. Now a rate of classification which permits of such things is not only unsystematic but is radically bad. It takes up the time of the railroad officials, it puts the customer to great trouble and expense for the silliest means of complying with the law, and at the same time it gives manufacturers a direct temptation to make a false declaration of the kind of merchandise sent. In addition to all this may be mentioned the feeling of mutual suspicion kept alive between the customer and the railroad, the former believing he has been purposely charged too much, and the latter always suspecting, often with reason, that goods have been shipped at rates much below those to which they were entitled.

The United States Government tried to set this matter to rights by means of the Inter-State Commerce Law, but like most governmental actions it has succeeded in achieving but little if any good. The real remedy lies with the railroads and with the customers, and each of them is afraid to take any steps in the matter for fear of losing by the change. They do not recognize that a logical and methodical classification, if classification there needs be, would effect a saving for both the railroad and its customers.

When a druggist receives cases of merchandise from a railroad company, he should instruct his truckman to examine them carefully, and if in bad condition to specify this on the receipt which he signs. If the railroad refuses to deliver them under these conditions, he can either leave the cases at the depot and make a claim against the company, or he can receipt for the packages "in good order," under protest, and make his claims afterwards if he finds any damage done.

When the goods are unpacked, two clerks should always be present to check off all the articles received, and to verify any damage. Their united testimony is of much more value than that of a single person.

Sometimes there is excessive damage, even when the packing-case itself shows no signs of ill-usage. In such an event the dispenser is in somewhat of a quandary. Manufacturers usually state that they are not responsible for damage to goods in transit; the railroads stamp the bills of lading with the words "owners' risk;" and the truckmen solemnly swear they have treated the boxes as carefully as though they were an investigating committee handling a "boodle" case.

In this dilemma, the druggist should carefully examine the packages, and if he finds that the cases were manifestly insufficient for the proper shipment of the goods, or if the packing was negligently performed, he should make a claim against the party that sold him the goods. If, however, the packing seems satisfactory, his claim should be against the transportation company, and should, as with all claims, be made at the office of shipment, a regular bill of damages being made out, and being forwarded along with a copy of the original receipt and receipted freight bill.

If he fails to obtain satisfaction from anybody, he has of course one last resource—to go to law about the matter; but this is a most unsatisfactory proceeding, and is too costly for the amount of pleasure it gives. From my personal experience I am convinced that railroads endeavor to be just in settling these questions, for they are well aware that juries are, as a rule, only too ready to favor private individuals who prosecute wealthy corporations. Hence the transportation companies are, as a rule, ready to make a compromise when they really believe their agents have been at fault.

One more case remains to be considered before we leave the question of receiving goods. It is the case in which the goods fail to arrive. The druggist has waited until the middle of May before placing his order, has written letter after letter of combined entreaty and profanity to hurry along the shipment, so as to lose as little of the warm weather as possible, and has at last received assurance that his goods have been shipped. Then he waits, and he waits, and he continues to wait. Well, the druggist is accustomed to waiting. He has had experience with small boys who have forgotten just what it is they do want, and he has been obliged to wait until they finally recollected what they had come for. He has waited for checks, too, waited when every day's delay made considerable difference to him. Consequently, in view of his experience it does not surprise him to be obliged to wait three or four weeks for his apparatus to reach him. But at the end of that time he begins to grow impatient. Finally he can stand it no longer, and writes to the manufacturer for an explanation. Then he learns that the apparatus was duly shipped, but must have gone astray in transportation. He at once starts a tracer after the goods, and perhaps by the end of the summer, if no hitch occurs, he may receive his soda-fountain. Often it is the railroad company that is at fault for the delay, still more often the manufacturer, but in the large majority of cases it is the druggist himself. Through inadvertence he has failed to send complete directions for the shipment of his goods, or even has omitted to give his address. He seems to forget that the manufacturer receives hundreds of letters every day, that the clerks are continually changing, and that it is not in the nature of an office employé to look up a point that he thinks he already knows. Consequently, the druggist who, when ordering goods, fails to state exactly what he wants, and how he wants it shipped, or who omits to give his full name and address, legibly written out or printed, will be continually annoyed by the errors made. Even with all possible precautions on his part he cannot hope for absolute immunity, hence he should do his utmost to reduce the risks to their lowest possible limit. It is astonishing how frequently men omit to even sign their letters; yet if the letter were carefully read over before being sealed, as should be the rule, not the exception, such a possibility would be almost out of the question.

When a druggist expects some especially important shipment, or one in which a delay might entail considerable loss, an excellent plan is to instruct the shipper to start a tracer after it a couple of days after the shipment is made. In this manner, even should the goods go astray, the tracer will correct the error without loss of time.

Another frequent source of mistake is the mixing up of parcels by the manufacturers. You receive the box intended for Mr. Smith, while he in turn is astonished by receiving the goods that you have ordered. Often, too, errors have been made in filling your order. Part of the goods are what you want, but the remainder are not. In all such cases the pharmacist's first impulse is to return the unordered goods to the manufacturer. This, however, is a great mistake. Often he could with advantage have the goods shipped directly from your place to some of his other customers, and so save considerable expressage; and still more often it happens that the goods are really what you do want, but you fail to recognize the fact because they differ somewhat from the last ones sent. Hence it is the best plan, when an error has been made, to hold the goods, and write to the manufacturers for instructions. Such a course will often save much time, money, and bitter feelings.

Turning now to the unpacking of the goods, too much stress cannot be laid upon the care required to do this properly. A receiving clerk armed with a mallet and a chisel is a constant danger. He seems to feel that brute strength is the one requisite for properly opening a case of goods, when in reality a little skill and care is far more desirable than strength. Moreover, the average clerk, in his economical effort to save the packing-case, will take off the cover, and then endeavor to pry out the machine or apparatus. With some goods this course is the proper one, but not with expensive apparatus. Here it is sound policy to sacrifice the case for the sake of the contents. With marble apparatus especially, the top and the sides of the case should all be removed before any attempt is made to take out the apparatus. Even with generators the same rule holds good, for the effort to pry them out may result in considerable damage to the machine. Moreover, in using the chisel, care must be taken to keep the strain as much as possible from coming on the apparatus itself, and when this is impossible the strain should be brought on the strongest points, say for instance against the edges of the marble slabs, never under any circumstances against the centre of a slab. This advice would seem superfluous to anyone who has not watched clerks unpacking; but druggists will find it pays to instill correct ideas on the subject into their employés.

Another caution required in unpacking apparatus is to see to it that all the smaller parts are present. A good packer will usually endeavor to put all the smaller objects together in some suitable receptacle—say, for instance, in a syrup tank or in an acid-pitcher; but a careless clerk may overlook them and throw away the straw in which they are contained. For this reason it is an excellent rule to carefully preserve all the packing in an empty case until the apparatus has been completely set up and it is found that everything is complete. Time and again have I known dispensers to complain to the manufacturer that some part was missing, when a week later a subsequent letter would explain that the missing part had been found in the straw. It usually happens, too, that the small part missing is sufficient to prevent the apparatus from being of any service whatever, and hence the carelessness of the clerk may cause considerable annoyance and delay.

Some manufacturers are thoughtful enough to send a list of all the articles in each case, and even take the trouble to tie together all small objects so that they will not become scattered in the straw. In this case the control is easy.

Often, too, the druggist will imagine that something has been omitted, when really nothing of the kind belongs to the apparatus. A familiar example of this is seen in the case of generators. The acid chamber and the gas-washer resemble each other so closely that nine druggists out of ten will imagine that because a gasket is necessary for the acid chamber, there should also be one for the gas-washer. As, however, this gasket merely serves to make the joint tight, and as there is no opening between the gas-washer and the generator, no gasket is required here, hence none is sent.

In conclusion I would say that there is nothing simple in this world. Just as the vital cell, which is the base of all organic life, and which seems simple to us in comparison with complex organisms, is nevertheless a product of wonderful complexity, so with everything else; and matters which seem to us extremely simple, such as the receiving and unpacking of goods, nevertheless require some study if they are to be properly performed.

THERAPEUTIC NOTES OF INTEREST TO PHARMACISTS.

BY DR. H. M. WHELPLEY, PH.G.

Sweating Feet.—As summer approaches, those who are troubled with sweating feet will be especially anxious to find something to destroy the disagreeable odor. A powder recommended by *L'Union Medicale* is made as follows:

Washed sulphur	30 grains.
Powdered arrowroot	4 ounces.
Salicylic acid	7 grains.

In dusting this powder over the feet, care should be taken to see that a good supply is placed between the toes. The disagreeable odor of sweating feet is caused by a germ, and the salicylic acid with the sulphur destroys this form of life.

Puff-ball is said to stop bleeding. Smith, in the Edinburgh *Medical Journal*, reports several cases of hæmorrhage in inaccessible situations for other treatment that were stopped by means of thin slices of puff-ball applied directly to the bleeding surface. While this treatment may be successful, we would suppose that there might be danger of infection from the use of such a substance.

Formaldehyde is now recommended by Dr. Aronsohn as an antiseptic. He has experimented with it, and finds that even in as weak solutions as 1:20000 it is a strong poison to the micro-organisms of typhoid fever and anthrax. The fumes of formaldehyde are also used on account of their antiseptic properties.

Smallpox and Sunlight.—An item to the effect that sunlight in the room occupied by a smallpox patient has a tendency to increase the depth of the pitting, is now going the rounds of the medical journals. The statement does not seem reasonable, and, since the authority is not given, we are inclined to doubt its reliability.

Colds are common enough; but just how they come, how they affect the system, and how they go, are questions that puzzle physicians. Dr. Whelm recommends a remedy which has a sufficient number of ingredients to meet the various demands of the most severe cold. It is as follows:

Sulphate of quinine	18 grains.
Fowler's solution	12 minims.
Solution of atropine	1 minim.
Powdered gum arabic	q. s.
Extract of gentian	20 grains.

The above amount is to be made into twelve pills, and one taken every three, four, or six hours, according to the severity of the cold.

Corns and Callosities.—Der Pharmaceut recommends the following treatment for this condition: Moisten the excrescence with an antiseptic solution, and cover it with a layer of pure, crystallized salicylic acid. Upon this place a disc of cotton-wool soaked in a boracic acid solution, and cover it with a leaf of gutta-percha. Attach the whole with a bandage. If the callosity is not very thick, the dressing may be left for five days; if it is exceedingly thick, the dressing may be left for ten days, or renewed after five days.

Hiccough can be stopped by the following sedative, according to the Dublin *Medical Journal:*

Iodide of potassium	3 grains.
Chloral hydrate	5 grains.
Bromide of potassium	7 grains.
Bicarbonate of potassium	15 grains.

This quantity should be taken at once, and the dose renewed if the hiccoughing does not stop within six hours.

Strontium salts are becoming very popular. They are given in doses considerably larger than the corresponding sodium salts; they do not cause the stomach trouble experienced when taking the latter. The *Therapeutic Gazette* quotes from a French medical journal the following formulas for the administration of the bromide, iodide, and lactate of strontium:

Syrup of orange	6 fluidounces.
Syrup of bitter orange	6 fluidounces.
Powdered bromide of strontium	1 drachm.

Dose: One teaspoonful.

Distilled water	10 fluidounces.
Iodide of strontium	5 drachms.

Dose: One teaspoonful.

Lactate of strontium	2 ounces.
Water	8 ounces.

Dose: One dessertspoonful.

A dose of nitrate of strontium is from 90 to 120 grains a day.

Tapeworms and pomegranate are incompatible, according to many years of experience. The *Medical and Surgical Reporter* says that when using this remedy the patient should fast for eighteen hours, take a strong cathartic, and then drink every hour a wineglass of the following decoction:

Fresh pomegranate bark	2 ounces.
Water	2 pints.

Boil down to one pint, and drain off for use.

Headache powders are becoming very numerous and quite popular. The majority of them have about the same composition, and depend for their effect on phenacetin combined with similar remedies. Dr. Barrett says, in the *Medical World*, that he always uses the following compound:

Phenacetin	5 to 10 grains.
Caffeine	1½ grains.

This is to be varied as required by circumstances. Dr. Hare in the *College and Clinical Record* adds to the above composition 10 grains of bromide of sodium. The Doctor varies the proportion of these ingredients to suit the case. It is much more satisfactory to write a prescription than to prescribe ready-made combinations under proprietary names.

Calomel and Hydrocyanic Acid.—Some time ago it was reported in a British medical society that these two substances should not be prescribed together, on account of the hydrocyanic acid transforming the calomel into corrosive sublimate. More recent investigations have shown that there is no danger of such a result. This is in keeping with our experience with combinations of calomel with various substances which are usually considered capable of changing the mild into the corrosive chloride of mercury. There are many theories of chemistry that are not very practical when treating diseases.

The Use of Cold Water in Fevers.—A correspondent of one of the leading medical journals complains that, while the medical world is moving on, and much has been done in the way of discovering new remedies which lower the temperature of the body in fevers, little attention is given to external medication. He complains bitterly that cold-water baths are not used as frequently as they should be as an antipyretic. We do not know where the Doctor is located, nor what methods of practice are followed in his section of the country, but if he will come to St. Louis he will not be obliged to look long in order to find hundreds of physicians making use of cold water for the purpose of reducing the temperature. We would call his attention to a little work entitled "The Modern Antipyretics," by Isaac Ott, M.D. This volume will give him a better idea of what other physicians are saying about the external use of cold water.

Chapped hands, according to Wendall, are cured by the use of the following wash:

	Parts.
Green soap	1
Compound tincture benzoin	4
Glycerin	8
Rose-water	16

We would advise the continued use of this wash after the hands have been cured, to prevent further trouble.

Oil of wintergreen is now used externally as well as internally for rheumatism. As a liniment, Staples recommends the use of one part each of olive oil and wintergreen oil.

A snuff for colds, especially colds in the head, as recommended by a French physician, is made as follows:

Menthol	3 drachms.
Powdered boric acid	1 drachm.
Subnitrate of bismuth	1½ drachms.

This snuff is to be used five or six times a day.

Typhoid Fever and Ice-Cream.—As the season approaches for the more general use of ice-cream, it may be well to remember that this form of confection may be the means of carrying typhoid-fever germs. It has long been known that typhoid fever may be caused by infected ice; and last year a writer in the London *Lancet* demonstrated that infected ice-cream might cause the same trouble. The practical point is to guard against using anything but ice-cream made from pure milk and cream by careful manufacturers. It was the Italian street-vendors' ice-cream that caused the outbreak of typhoid fever that led to the discovery of the above facts regarding its power of transmitting contagion.

Itching may be caused by so many different troubles that it is difficult to give a general remedy. One that will never do harm and frequently furnishes relief is given in the *Medical and Surgical Reporter* as follows:

Menthol	2 drachms.
Oil of sweet almonds	3 fluidounces.

Scabies is a disease which occasionally causes persistent trouble. A celebrated Vienna professor treats it with the following salve:

Lard	3½ ounces.
Soap	1½ ounces.
Naphthol	4 drachms.
Powdered chalk	2½ drachms.

He claims that this treatment will effect a cure within twenty-four hours. If the disease is accompanied by persistent itching, the amount of naphthol should be reduced to one-half the above amount and the treatment continued for two days.

Muscular spasms and cramps do not often continue very long at a time, but cause a great deal of pain while they do last. Dr. Hare says the following liniment will usually give relief:

Tincture belladonna	4 fluidrachms.
Soap liniment	6 fluidounces.

A Domestic Cure for the Sting of Insects.—When a child we learned that fresh urine freely applied was a useful remedy for the sting of hornets, bees, and other insects. We now find Terry recommending this domestic remedy, which he applies by means of a cloth kept continually moist with fresh urine until the pain ceases. He surmises, and probably very correctly, that the urine is a chemical antidote to the poison. Since the season for the sting of insects will be with us in a few weeks, the above remedy is quite timely.

Cholera is not here, but many believe that we will have a visit from the genuine Asiatic article before the summer is over. Dr. Mitchell, in the Memphis *Medical Monthly*, recommends the following treatment:

Sulphuric acid, dilute	30 minims.
Sulphate of morphine	⅓ grain.
Brandy	1½ fluidrachms.
Distilled water	3 fluidounces.

This is to be injected under the skin of the arms, legs, and over the stomach, every hour until the symptoms are relieved.

Diarrhœa, green apples, and their companions are making their appearance. Prof. Hare says that a good all-around remedy for this disease is the following:

Dilute sulphuric acid	1 fluidrachm.
Fluid extract of logwood	1 fluidounce.
Paregoric	4 fluidrachms.
Syrup of ginger.........to make	4 fluidounces.

The dose is a dessertspoonful every hour.

Alkalies for Persistent Itching.—Dr. Lang, in the *Times and Register*, reports a case of rebellious itching which he cured by the continual use of bicarbonate of sodium, carbonate of lithium, alkaline waters, etc. He was led to try this treatment by the discovery that the urine was loaded with marked acids and urates. In similar cases it would be well to examine the urine with the view of following the Doctor's treatment.

Heroic Treatment for Apparent Death from Drowning.—A French physician reports his method for this emergency. It consists in seizing the tongue and pulling it as far out of the mouth as possible, and then making rhythmic tractions on it. This procedure is followed by hiccoughing, strangling, contraction of the diaphragm, and finally respiration followed by circulation of the blood. As an aid in this treatment, the Doctor recommends the application of cloths soaked in very hot water and laid over the pit of the abdomen.

Nervous coughs are among the most difficult to suppress. Dr. Hare recommends the inhalation of the fumes from 4 fluidrachms of paregoric added to 1 pint of boiling water.

Europhen for Burns.—According to the *Therapeutic Gazette*, this remedy can be applied to burns in the following form:

Europhen	45 grains.
Olive oil	2 fluidrachms.
Vaselin	2 ounces.
Lanolin	1 ounce.

The treatment of drunkenness is especially interesting at this time, on account of the numerous institutes devoted to that purpose. Dr. Dana, of the Bellevue Hospital, according to the *New York Medical Record*, has made a very careful study of 614 cases. He says that strychnine is the best remedy in acute cases. He gives one-sixtieth of a grain every two or three hours. In chronic cases he gives the remedy less frequently but for a longer period of time. The Doctor lays special stress on a hot-milk and beef-tea diet, with plenty of red pepper.

A poisonous dose of codeine is not often reported. The London *Lancet* describes a case in which 1½-grain doses caused serious toxic symptoms for three days in spite of proper medical treatment. The poisonous symptoms were similar to those of opium. The correspondent triumphantly points out that the codeine cured the cough for which it was given, although it came near killing the patient.

A substitute for gum arabic is described by *La Médecine Moderne* as follows: "Boil 1 part of flaxseed with 8 parts of sulphuric acid and 8 parts of water. The mixture at first thickens considerably, but gradually becomes fluid as it boils. When it has become fluid, filter, and add to the solution four times its volume of concentrated alcohol. The precipitate is taken up, washed with alcohol, and dried. The result is an amorphous, colorless, insipid substance, having the properties of gum arabic, and, like it, dissolving in water to form a thick paste."

CHEMISTRY.

"CHEMICALLY PURE."*

BY DR. OTTO N. WITT.

It is to be regretted that the term "pure" is so often used by chemists who should be the very ones to realize how seldom it applies. True it is that chemistry, with its manifold auxiliaries of marvelous perfection, can readily isolate the greater number of chemical substances in a state *approximating* purity; but nothing is more difficult than the production of such substances satisfying our conception of *absolute* purity. And yet a great distinction must be here observed. It is an incontrovertible fact that the properties of the overwhelming majority of substances are most surprisingly modified by the presence of the very slightest quantities of foreign substances adhering to them, and that only when the last traces of the impurity are removed do the true properties reveal themselves. There is no dearth of illustrations:

When the Belgian chemist Stas first succeeded in producing truly pure potassium salts, he made the observation that they do not color the flame violet, as has always been stated of the potassium salts, but a pure blue. Now, this may seem of little consequence to one not a chemist; but in other instances the influence exerted is such that by the mingled traces of impurities the technical properties of a substance are completely modified. It is now a well known fact that iron owes its varying uses—as cast-iron, steel, and wrought-iron—solely to an admixture of carbon which in quantity is so slight that we should be disposed to look upon it as inappreciable if its effects were not so surprising. But not only is this true of this metal, but of the majority of all metals.

The elements of nickel and cobalt, so closely allied to iron, were known to chemists, up to about twenty years ago, only in the form of plain, gray cubes, as they were obtained from the ores by a peculiar process of reduction. These cubes were so brittle that the stroke of a hammer was sufficient to shatter them, and no one supposed that he was here dealing with metals of the greatest technical importance. When it was then found possible to obtain nickel by electrolysis, deposited in a thin layer upon other metals, everyone, of course, admired the nice grayish color of the deposited metal, and its power to maintain its bright surface despite atmospheric influences. But it had as yet occurred to no one that the metal itself, as such, might possess useful properties. The world was then surprised by the announcement that it had been found possible, not only to fuse nickel, but also to render it as ductile as iron by adding to it a little magnesium while in a state of fusion. It was soon found that the metal thus obtained did not represent an alloy of nickel with magnesium; for the latter had been consumed in the process of fusion and had passed over into the slack.

But why had the nickel remained behind with properties so different from those formerly possessed? The answer to this question has, in truth, never been given with precision, although, in view of the foregoing facts, it is not at all difficult. The cube or quartz-nickel, as we had previously known it, was no pure nickel-metal, but it contained an admixture, which was indeed quantitatively so slight that it was considered permissible to ignore it, but whose influence on the properties of the metal cannot be sufficiently estimated. By the addition of magnesium, a metal possessing a most remarkable affinity for hydrogen, the latter was withdrawn from the nickel, and afterwards was consumed with the magnesium during combustion. The dehydrogenated nickel remaining, possessed the advantages of ductility and malleability, which previously had been totally destroyed by the hydrogen present.

But the surprises which this metal held in store for us were not yet at an end. Nothing was more natural than the opinion that the twin-brother of nickel—cobalt—would behave very similarly, and that it was doubtless also capable of a like transformation of great technical importance. But to the great astonishment of the metallurgists, this hypothesis did not hold good. We have indeed succeeded, by dint of special, careful labor, in obtaining the cobalt in a form of perfect purity and great utility; at the same time it was found that its color is not yellowish-gray like that of nickel, but rather bluish-white and silvery; but the great property which nickel possesses, of resisting atmospheric influences, cobalt has not exhibited. Never was this fact more pointedly illustrated than by an American closely connected with the nickel industry, who caused to be made two stirrups of the same form, one from pure nickel, the other from cobalt. After a brief use, the former remained bright and intact, the latter was much worn and oxidized.

But even the so-called pure nickel is not always uniform in its behavior; there are some kinds which are of extraordinary durability, others which possess this property in very slight measure. The cause is to be found in the very slight quantity of admixture which effects the properties of the metal. The extremely meagre traces of cobalt and copper which cling to most of the commercial forms of nickel, are here to blame. A nickel which is altogether free from these admixtures exhibits the highest degree of resisting power, whereas the ordinary commercial grades owe their greater vulnerability precisely to their slight proportion of cobalt.

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*Translated for the BULLETIN OF PHARMACY from "Prometheus."

It is by no means to be supposed that such peculiarities are to be found solely amongst the near relatives of iron; we may find other examples of metals which in an absolutely pure state possess properties quite different from their alloys, however slight the quantity of foreign substances in the latter. A very interesting example of this has recently been found in one of the most precious metals, platinum. We know that platinum and a few of its congeners, by which it is always accompanied, form a very exclusive "set" amongst the metals. Confined to a few places, these elements are always found mingled with one another, and only in solid form, so that it suffices to wash them like gold out of the sand in which they are imbedded. The crude platinum thus obtained is a mixture of the metals of the platinum group: platinum, iridium, palladium, rhodium, osmium, ruthenium. From these we may at the outset exclude the latter two, which in reality do not belong to the precious metals; the four others, however, are obtained together in the process of refining the platinum. The rhodium, which is present in very small quantities, need not be considered; the palladium, the proportion of which is likewise very small, is separated in a state of purity, since it has certain technical uses; and finally we have left an alloy of platinum and iridium. This forms what has hitherto been known in commerce as platinum, with all its characteristic properties of difficult fusibility and exceptional resisting-power. As these properties are vested in the pure iridium in even a greater degree than in the alloy, it was always held that the small percentage of iridium contained in the platinum of commerce could only augment the utility of the metal. Only in the very recent past has the attempt been made to manipulate perfectly pure platinum into objects of use, and it was then found that this metal in a state of purity possesses properties quite different from, and much more valuable than, those of the alloy previously employed. Pure iridium is indeed virtually non-fusible, but is also as brittle as glass, and the small percentage contained in the platinum is sufficient materially to reduce its ductility. In perfectly pure platinum we have a metal almost silvery-white in color, possessing a degree of ductility and malleability which considerably widens the range of its employment.

In weighing the influence exerted by slight impurities upon the properties of the metals to which they are added, the metallurgy of our day has achieved its greatest triumphs, and we have every reason to assume that they are not yet at an end. What surprises are yet here in store for us cannot, of course, be predicted; but we have still a number of metals which, like manganese, chromium, and various others, are familiar and common enough in their combinations, but remain virtually uninvestigated in a state of purity. The difficulties which impede a more searching study are certainly not insignificant. The examination of a few grammes in the laboratory, so readily performed with security in the case of other bodies, does not suffice at all in these instances; and metallurgical manipulations on a large scale, of substances still unknown, are as difficult as they are expensive. This domain can be explored only step by step; but, on the other hand, the results obtained bear with them no meagre reward. Even now it is asserted that chromium, deposited in a state of purity by the electric current, is endowed with properties which render it at least the peer of nickel—although we deem it fitting to await a confirmation of this report before announcing it to our readers.

Not alone in the metals, but likewise in the non-metallic substances, do quantitatively insignificant admixtures play a rôle of uncommon importance in the modification of their properties. It is not improbable that, amongst other things, the so-called phenomenon of allotropy is to be referred solely to such causes. By allotropy we understand that property of certain substances, by virtue of which complete identity of chemical composition is accompanied with a disparity of properties. The most familiar instance of allotropy is to be found in phosphorus, which may be obtained both as a waxy, translucent, kneadable, whitish mass with great power of reaction, and also as a deep red, insoluble, rather unsensitive powder. The variance in the properties of both modifications is best illustrated in the matches which may be made with them. The ordinary matches, which may be ignited by friction with any surface, bear the white modification of phosphorus, while the rubbing surface of the so-called Swedish variety is covered with red, amorphous phosphorus. The allotropy of phosphorus is certainly not produced by admixtures, but is derived from the varying number of phosphorus atoms which combine into a molecule. We have the same thing in oxygen and in sulphur, the former occurring in two and the latter in at least four allotropic modifications; but, characteristically of these substances, we can transform their various modifications into one another quite at pleasure.

The case is altogether different with one of the most familiar and widely distributed of elements—carbon. The text-books inform us that pure carbon may occur in three different allotropic forms: coal, graphite, and diamond. But most chemists realize that this is only a kind of pious tradition, which we continue to teach and believe for lack of something better. No one has thus far transformed coal into graphite, graphite into diamond; and when it is asserted that in individual instances diamonds, subjected to intense heat, have been suddenly transformed into graphite-like masses, such assertions are not beyond all doubt. Pure carbon, burned in a current of oxygen, must be transformed into carbonic acid without any residue, but thus far this has been proved only of the diamond with perfect accuracy. Graphite, as well as the purest coal, on combustion leaves behind always a very slight quantity of ash; and this ash would suggest that in the material originally used, other substances were combined in meagre proportions with the carbon, and these other substances may have so affected the carbon that it receives the properties which show such a wide divergence from those of pure carbon —the diamond.

Whether perfectly pure carbon will ever be produced in the laboratory, is questionable; but it is even more questionable what properties pure carbon will possess when its production is once accomplished.

BOTANY AND MATERIA MEDICA.

THE MEDICINAL AND ECONOMIC USES OF SEA-WEED.

BY P. L. SIMMONDS, F. L. S.

Chemists derive a multitude of precious products from sea-weed; such as salts, iodides, and bromides. In science, in therapeutics, as a healthy food for man and animals, in agriculture and industry, sea-weeds occupy a prominent place.

Iodine is of great value in photography and medicine, and its production from kelp used to be the most important of all the applications of sea-weed, but this chemical product is now chiefly prepared from the salines of Chile and other countries. The production of iodine in Chile has trebled in the last twelve years. In 1877 the production of iodine in Great Britain and France was 2,000 cwt.; now it is less than half that, while Chile produces over 6,000 cwt.

Of the sea-weeds the species of Laminaria yield the largest proportion of iodine—from five to ten pounds per ton.

It may seem strange that we should occupy ourselves with marine plants, when we possess so many useful ones on land. But people who have much sea-coast find great utility in sea-weeds, and an extensive trade is carried on in them in many countries, both for food and manure.

In the words of Dr. Davy: "Are not these esculent sea-weeds, on account of the iodine and bromine they more or less contain, deserving of more general use? Nowhere, I believe, where they are in common use, is bronchocele known, and, as far as I have been able to ascertain, scrofulous complaints are rare, and even pulmonary consumption; whilst on the contrary, in inland districts, even in our own country, bronchocele and scrofula are more or less prevalent, especially amongst the laboring class, who rarely have the benefit of articles of food known to contain iodine." In chemical composition, sea-weeds appear to rank high, since they are said to contain 10 to 15 per cent. of nitrogenous and 60 to 70 per cent. of carbonaceous matter; but the flavor is not such as to lead to their general use. When steeped in water with a little soda, they lose the adherent salt and much of their bitterness, and may then be prepared as a mucilaginous food by long stewing in water, milk, or soup.

The inhabitants of the Alps who are affected with goitre, a disease consisting of enlargement of the glands of the neck, chew the stem of a particular species of Fucus which they carry about with them; its virtues depending on iodine. The stems of *Sargassum bacciferum*, Ag., are used by the inhabitants of South America for the same purpose. The North American Indians burn sea-weed to ashes, with which they cure swellings of the glands; and the Siamese have so great an esteem for sea-weed that they mix it with their famous betel-nut, which they are almost continually chewing.

Zostera marina has, in popular estimation, some medicinal virtues, but they are of questionable existence. It has the habit of the sea-weeds, although belonging to another natural order. This sea-wrack is largely used for stuffing beds and chairs, and is known as "alva" in England. The total trade in it is estimated to exceed £2,000 in value in France.

The Chinese Herbal mentions various species of sea-weed as possessing strong and well-known therapeutic properties, being of special value in the dispersion of hard tumors—goitre, for example. They have long been acquainted with the general virtues of the various species of Laminariæ, and these varieties are mentioned as occurring along the coasts of the Eastern Sea, Corea, and the Malayan Archipelago. The people in the maritime provinces of China eat sea-weed plentifully, both medicinally and as a vegetable food. It is prescribed alone, chiefly in the form of tincture, its saltish taste having been first washed away; or it is mixed up with other medicines in various prescriptions. The uses to which in China the different kinds of sea-weed are put, correspond to those of Europe before the discovery of iodine.

There is another species of algæ which has a certain relative importance in Cochin China, as it is used medicinally, being administered to patients in different forms of drugs, cataplasms, moxas, etc. This species is called locally *hai-toc*, or "beard of the rocks." It has a fine green color.

The dry stems of the Laminariæ, particularly the digitate species, as *L. flexicaulis*, are used by surgical-instrument makers in the manufacture of sponge tents.

Irish moss (really a sea-weed) is one of the few marine plants used as human food in Europe and America. The true Irish moss, or carrageen, is *Chondrus* *crispus;* but other species, such as *Gigartina mamillosa*, are frequently collected with it. Both these kinds, as well as several similar edible sea-weeds, have about the same nutritive value, which is considerable. The chief constituent of Irish moss is a kind of mucilage, which dissolves to a stiff paste in boiling water. There is also a little iodine and much sulphur in it. The jelly made from this still despised weed possesses all the valuable properties of animal jellies, along with healing, soothing, and nutritious properties, for persons with colds and of delicate constitution, which are not found in any animal jelly. This weed is gathered in large quantities on the American coast, and sold for making *blanc mange*, puddings, and seafarina, and is used by brewers for clarifying beer, and by calico printers.

Chondrus polymorphus is used by the brewers of Germany in clarifying beer.

Fucus vesiculosus, Lin., known as "bladder-wrack," when given as a liquid, diminishes glandular swellings in scrofulous cases, and a teaspoonful is given as an alterative tonic and for reducing obesity. The dose of the extract is from one to two drachms. But as an anti-fat, iodide of potassium, bladder-wrack, and all old remedies are now discarded.

From ancient times the juice of sea-weed has maintained a certain degree of celebrity as a remedy in glandular diseases and in general and local debility; at one time being locally extolled, and again sinking into neglect on account of the difficulties attending its use, but never entirely losing its good name, and still continuing to be used, to some extent, by the bathing women and nurses at most watering-places. It has been recommended with wine, as a remedy in diseases of the hip and other bones and joints of children.

The quantity of foreign sea-weed and agar-agar imported into China has advanced from 215,646 piculs (of 1¼ cwt.) in 1868, to 333,863 piculs in 1878; and for the last six years has averaged 450,000 piculs per annum, of the value of about £191,500.

The Chinese and Japanese consume large quantities of this marine vegetable as food. Jellies prepared from *Gelidium comeum*, Link., *Laurencia papillosa*, Grev., and other species, are also much used there for food.

A species of gelose or isinglass is also made in Japan from sea-weed, and it has been imported into Europe, sweetened, flavored, and ready for use, and in this state it may be kept for years without deterioration.

The Annamites give the name Rau-cau to several species of algæ—Conferva, Corallina, Gelidium spinoforme, etc.—which are collected from the rocks, and known in Chinese medicine as Hai-Thao. There are two qualities of this Rau-cau obtained in Cochin China; one sells at £2 the picul of 1¼ cwt., the other or inferior at but half that price.

Besides the native use of sea-weed, there is a large export trade from Japan, where it is called Comboo. It is shipped in two forms—cut and uncut. There is an export duty of 60 cents per picul on the cut, and 30 cents on the uncut. It is extensively used by the Chinese as a substitute for salt.

The Cochin Chinese whet their appetite with sea-weed highly seasoned with garlic in fresh water. This forms an ingredient of their celebrated sauce "Nuach-mam," of a strong and repulsive odor, which is largely exported to all parts of the far East, and is alleged to have very hygienic properties.

Under the name of "Mat," *Porphyra vulgaris*, Ag., is reduced into jelly by boiling, and also serves as food for the Annamites.

Porphyra vulgaris is commonly called "Lavas" on the eastern coast of America. It is found in nearly all parts of the world at low tide. Many of the Indians along the Pacific coast eat this plant cooked as greens or with meat. It is much relished by Chinamen, and is quite an article of commerce with them. They gather it from the rocks, place it in round masses to dry, after which it is baked and sent to China. It sells at from 2½*d.* to 4*d.* per pound in San Francisco, wholesale, to be shipped to China.

The finer kinds of sea-weed isinglass, which are white and transparent, have a multitude of uses, and replace in most cases the paste used in Europe. This isinglass is employed in making pastry, biscuits, macaroons, and in confectionery; in paper-making; in stiffening light gauzes and fine silks which serve for fans, hand screens, hangings, etc. It is on these stuffs, so carefully prepared, that the native artists produce such handsome designs, of incomparable colors.

The common brown species of isinglass, the deposit in cooking, is employed by the makers of *ketty sols*, or paper umbrellas and parasols, and lanterns—in coating the fine strips of bamboo of which these are made. This gelose has ten times the gelatinizing power of fish isinglass, and will set into a jelly five hundred times its weight of water. It is not nitrogenous, and contains carbon 42.8, hydrogen 5.8, oxygen 51.4.

Gracilaria lichenoides, Greville.—This sea-weed, popularly known as Ceylon moss, is emollient, demulcent, and nutritious, and as a medicinal agent is useful in pulmonary complaints. It is official in the Indian Pharmacopœia, and is much used in the East for making jellies and sweetmeats flavored with aromatics.

Rhodomenia palmata, Greville.—Under the name of "dulse" this species is employed as food by the poor in many northern countries. It is nutritious, but sudorific, and has a smell resembling violets. When washed thoroughly in fresh water, and dried in the air, it becomes covered with a white efflorescence and is sweet and palatable. In Kamschatka a fermented liquor is produced from it. Dulse is frequently sold in the streets of the sea-side cities of America, taking the place of the school-girls' chewing gum.

The pepper dulse (*Laurencia pinnatifida*, Lamour.), distinguished for its pungent taste, is often used as a condiment when other sea-weeds are eaten. The proportion of nitrogen this and some other algæ contain, exceeds not only that of the ordinary articles of food, but even that of wheaten flour of the first quality, as 2,407 to 1,817. [See my article on the "Economic Uses of the Algæ," *Journal of the Society of Arts*, vol. v, p. 362.]

The Agassiz expedition passed immense quantities of the largest known algæ, the *Macrocystis pyrifera*, which throws up from the oceanic depths stems of immense length, some of them from 700 to 1,000 feet, the greatest development reached by any member of the vegetable race. I might enlarge here upon the wonderful varieties of marine plants with which the oceans are studded, and the animals which exist upon them, and which are mutually dependent upon and successive to each other; but for these and the various industrial and economic uses of sea-weed I must refer the reader to various works of mine, "The Commercial Products of the Sea," "Waste Products and Undeveloped Substances," etc.

ANSWERS TO CORRESPONDENTS.

C. W. S., Phila.—The plant called Tasi is a native of South America, in the regions of Guiana and Brazil. It is known botanically as *Tachigalia paniculata*, Aubl. It is said to be used largely by the Indians of its habitat as a galactagogue; but whether there is any merit in the plant in this direction, or not, we are not prepared to say.

R. T. S., Texas.—Pine Stone, or Pine Nuts, are names indefinitely applied to the seed of various species of Pines, several of which are of European, and several of American, habitat. The two principal species of the latter, which our native Indians make use of as food material, are *Pinus Sabiniana*, Dougl., and *P. monophylla*, Torr. & Frem. These are Californian species, and probably, if you wish to obtain some of the seeds, they may be had on application to the University of California Experiment Station, at Berkeley, Cal.

G. T. H., Mich.—"Galega vera" we consider worthless as a galactagogue, if for no other reason than that it has appeared in the published formula of a patent medicine now being sold largely as a "neutrolactic." There appear from time to time various articles of the vegetable kingdom which are said to be specifics for this purpose, and it has been our experience to find that the claims were invariably made on entirely unscientific, if not indeed fraudulent, bases. We shall be glad to acknowledge our mistake if the future shall prove that the plant called by the above name is other than what we have said. There are several species of the genus Galega, but we have not been able to find a species recorded which is represented by the name you furnish.

C. E. D., Mont.—The root you sent us for identification is that which is popularly known as Colorado Cough Root; it is also called by the Indian names of Osha, Tosha, Toshack, etc. Its botanical name is said to be *Leptotænia multifida*, Nutt. The plant is quite largely sold in our Western States as a popular remedy for coughs, colds, etc., and we believe it is also put up in patent-medicine form in somewhat the same way which you mention for use in the above indications. We do not know whether the root is entirely worthy of all that is claimed for it, but it certainly deserves some further investigation.

THYMACETIN.

E. Maraudon de Montyel (*Bull. Gén. de Thérap.*, Jan. 30th) summarizes the results of a careful study of thymacetin as follows: (1) The drug proved inactive as regards sensation, sleep, intellectual powers, the genital organs, and the intestines. (2) It was inactive with regard to the general reflexes, save that it occasionally caused double dilatation of the pupils, but without disturbance of vision. This, however, only lasted for about half an hour. (3) Immediately after its administration, it gave rise in certain cases to unsteadiness and a condition resembling intoxication, but this all passed off in a short time. (4) The muscular force, as measured by the dynamometer, was increased. (5) In about three-fourths of the cases the drug produced slight headache, which sometimes lasted for several hours. (6) A rise of temperature—as much as 1° C.—always followed its ingestion, the rise persisting for about two hours. (7) The respiration also was somewhat accelerated, but was not altered as regards rhythm. Arterial tension and pulse-rate were also increased. (8) In the majority of cases the use of the drug was followed by troublesome lassitude, which often lasted till the next day. (9) On micturition it had the following effect: (*a*) it caused a desire to micturate; (*b*) sometimes a temporary urethro-vesical spasm, with transitory retention and dysuria; (*c*) a sense of burning during the act of micturition. These effects occurred either singly or combined. (10) In two-thirds of the cases the use of the drug was followed by a bitter taste in the mouth and furred tongue. (11) Swallowing the drug nearly always produced a feeling of warmth in the epigastrium, and this sometimes spread over the rest of the body. It also gave rise to thirst, anorexia, nausea, vomiting, and gastric catarrh in some cases. (12) All the above effects were observed as the result of small doses. (13) General paralytic patients, far from being easily affected by thymacetin, appeared to be least susceptible to its action.—*British Medical Journal*, March 11, 1893.

Perfumed Naphthalin.

A. H.—Dietrich gives the following formula as an agreeable preparation for the destruction of moths and bedbugs:

	Parts.
Naphthalin	3,000
Camphor	1,000
Coumarin	2
Nitrobenzol	10
Oil of Neroli	1

Mix.

Antiseptic Adhesive Pomade.

This pomade is said to be very serviceable in keeping protective dressings in close apposition to the skin:

℞

Oxide of zinc	10 grains.
Chloride of zinc	14 grains.
Gelatin	10 drachms.
Water	2 ounces.

Brown-Leather Polish.

C. J. B.—

Annatto	½ ounce.
Catechu	1 ounce.
Gamboge	½ ounce.
Gum acacia	½ ounce.
Hydrochloric acid	1 fluidounce.
Water	2 pints.

Mock Turtle Broth.

Mosquera Beef Jelly	2 ounces.
Barley, oatmeal, or starch	½ ounce.
Gelatin	¼ ounce.
Tr. orange peel (bitter), U.S.P.	3 fluidrachms.
Tr. capsicum	18 minims.
Lime juice	3 fluidrachms.
Worcestershire sauce	3 fluidrachms.
Salt	¼ ounce.
Hot water q. s. ad	1 pint.

Make a thin paste from starch or other material; swell the gelatin in cold water; dissolve the beef extract in hot water with the salt; add to the hot mixture the starch paste and softened gelatin, and bring all to a boil; strain through a wire strainer, add the flavorings and hot water to finish.

Antiseptic Powder, Improved.

The following formula is used largely in the hospital wards of a city institution in the treatment of chronic ulcers, suppurating sores, and generally as an iodoform substitute:

Salol, powdered	1 ounce.
Sulphite of zinc, powdered	1½ ounces.
Benzoin, powdered	½ ounce.
Purified talcum	2 ounces.
Oil fennel	20 minims.

Mix.

Bath Powder.

K. C.—

Powdered borax	4 ounces.
Salicylic acid	1 drachm.
Extract of cassia	1 drachm.
Extract of jasmine	1 drachm.
Oil of lavender	20 minims.

Rub the oil and extracts with the borax and acid until the alcohol has evaporated, and put in wooden box. Use a heaping teaspoonful to the body bath.

Pinaud's Eau de Quinine.

W. N.—The *Deutsche Apotheker Zeitung* gives the following as the formula:

	Parts.
Quinine sulphate	1
Tincture cantharides	10
Glycerin	75
Alcohol	500
Tincture of rhatany	20
Spirit of lavender	50

Mix.

Shaving Cream.

Naples soft soap	4 ounces.
Lanolin	½ ounce.
Rectified spirit	½ ounce.
Perfume	q. s.

Mix the soft soap and lanolin with the spirit and perfume, in a mortar.

Ferro-Iodized Cod-Liver Oil.

Ch. Diete gives the following in the *Chemische Zeitung:*

Porphyrized iron	4 grammes.
Iodine	8.20 grammes.
Ether	70 grammes.

Mix and agitate until all the iron is converted into iodide. Then heat in a water-bath 200 grammes of cod-liver oil; add the etheric solution of iodide of iron, and continue the heat until the ether is driven off. Let cool, and filter. This preparation should be preserved in small containers only.

Anise-seed Cordial.

Oil anise (Saxony)	40 minims.
Oil fennel	10 minims.
Oil bitter almond	1 minim.
Syrup	12 fluidounces.
Water	12 fluidounces.
Alcohol	8 fluidounces.
Fuller's earth	1 ounce.

Mix and filter.

A Cure for Dipsomania.

C. J. P.—The mixture below formulated is said to be very serviceable in overcoming the ill-effects of the alcohol habit, even to destroying the desire for alcohol:

℞

Ichthyol	ʒ ij.
Sulphate of hydrastine	ʒ ss.
Resorcin	ʒ ij.
Infusion of calumba	℥ iij.
Tincture of nux vomica	ʒ iij.
Solution of the acetate of ammonia (recent) q. s. ad	℥ vj.

Two teaspoonfuls every three or four hours during a period of two or three weeks.

Lotion for Insect Bites.

Among other remedies recommended recently for the bites of insects the following possesses evident advantages:

	Parts.
Cocaine hydrochlorate	3
Alcohol	30
Glycerin	30
Rose-water	200

Apply in the usual manner.

Betrand's Anti-Neuralgic Pomade.

	Parts.
Veratrine	30
Hydrochlorate of morphine	20
Lard, benzoated	300

Dissolve the veratrine in the smallest quantity of absolute alcohol, and rub the solution up with the lard and morphine. Apply to the seat of pain, and rub in with the hand.

Gargles for Fetid Breath.

1.	Parts.
℞ Eucalyptus and Thymol Antiseptic (P., D. & Co.)	1
Warm water	3

2.	Parts.
℞ Thymol	1
Borax	4
Alcohol	4
Distilled water	2,000

Mix, and use as a mouth-wash.

3.	Parts.
℞ Salicylic acid	5
Saccharin	5
Bicarbonate of sodium	5
Alcohol	150

Mix. Add a teaspoonful to a glass of water, and with the mixture gargle the mouth and throat frequently.

Liquid Soap.

	Parts.
℞ Oleic acid	187
Best cocoanut oil	33
Potash lye (35° B.)	114
Glycerin	10

Saponify by a gentle heat, and add sufficient alcohol to render clear.

A Brilliant Label Varnish.

	Parts.
℞ Mastic	30
Oil lavender	5
Alcohol	50
Benzin	40

Mix, let digest until solution is effected, then decant. Labels are varnished with this solution and dried. After drying, go over with collodion cut with half its volume of ether, and finally with one part of gelatin in four parts of hot water.

Beauty-Powder.

Wheat starch, finest	400.0
Ultramarine blue	2.0
Oil rose	1.0
Oil neroli	0.5

Mix.

LONDON LETTER.

Results of the Aconite Research—The Poisonous-Proprietary-Medicine Contest: A Parting Shot in the House—The Sale of Opium at Home and Abroad—Solid Air, Visible and Tangible—White and Yellow Paraffin-molle: A Dispensing Question—A Corn-Paint Prosecution.

At the latest monthly meeting of the Pharmaceutical Society, the aconite research referred to in the previous letter was again to the fore. Since the last two or three papers on the subject have been read before the Chemical Society, it was fitting that the members of the association which supports the Research Laboratory should receive official notification of the progress made in the work.

The Lecture Theatre presented an unusually verdant appearance on the occasion, owing to the exuberant specimens of *Aconitum Napellus* grown in the garden of Mr. E. M. Holmes, Curator of the Society's museum. Besides these there were herbarium specimens of the plant grown in this country and in Germany, and also of allied species of the same family. The investigation itself was represented by fine specimens of crystallized aconitine and its salts, of aconine, and iso-aconitine. Some of the specimens were solid, and others were still in process of crystallization.

Prof. Dunstan referred briefly to the history of aconite and of its chemical investigation, and, in proceeding to give a short account of the results reached so far in the Research Laboratory, gave special attention to their practical bearing upon medicine and pharmacy.

But aconite is not alone in its responsiveness to chemical inquiry. Another alkaloid is added to the products of opium in the shape of a golden but rather infirm base called xanthaline.

[A detailed account of the results of the aconite and xanthaline researches will be found in the "Progress" department of this issue of the Bulletin.]

The attention which has been drawn upon pharmacy as a profession by the ventilation of the problem whether they had or had not an exclusive right to the sale of poisons in all forms—even that of the proprietary medicine—will not be without its effect upon the public appreciation of the responsible position occupied by the chemist and druggist.

In previous letters reference has been made to the contest between the grocers and the pharmacists, which ended in victory for the latter. The Grocers' Federation, which conducted the affairs of the hostile camp, fired a parting shot in the House of Commons a few days ago by the instrumentality of Mr. F. C. Frye, who champions the grocers in the House. The question was a long and carefully worded one, containing some three or four distinct subdivisions. The answer, however, showed that the Government looks upon the act providing restrictions on the sale of poisons as one of the most useful measures on the statute-book, and does not intend to take any steps to check its strict observance.

Another question in which the Pharmacy Act figured was also put in the House recently. Readers will be aware, ot course, of the dimensions of the trade in opium carried on in our Indian Empire. There is a class of agitators here who never tire of raising the question as to the morality of this business, which is an important source of the revenue of the Empire. The Government was asked whether there was any intention of removing the restrictions upon the sale of opium in this country and allowing it to be freely sold by licensed persons, as in India, or whether in the interests of Her Majesty's subjects in India restrictions should not be applied to the sale of opium there as well as in this country. The question was of course "meant sarcastic," and drew the inevitable answer that there was no intention to alter the conditions under which opium is sold either here or in India.

Considerable interest has been excited in scientific, and even in what Carlyle so scornfully termed "dilettante," circles by the liquefaction and finally solidification of air by Prof. Dewar. The novelty of the process consists, of course, not in the fact that air has been rendered fluid—that has been done before—but in the arrangement of the apparatus so that the product could be seen by the audience of a large lecture theatre. It is, however, curious that while air has been frozen by Prof. Dewar into a clear, transparent solid, all his efforts to solidify oxygen have failed. Nitrogen is by no means resistant to solidification with the appliances now at the disposal of the chemist, but oxygen does not solidify even when the liquid is evaporated under the air-pump—a process that succeeds with other gases. It is therefore a little difficult to understand how the mixture of oxygen and nitrogen, which constitutes air, can be solidified, unless the admixture of the two has an effect upon the freezing-point of oxygen. We all know, of course, how the melting-point of mixtures of metals and salts differs from that of either of the constituents. As an evidence of the interest the work of Dewar has aroused, it may be added that the experiment was repeated at the Royal Institution before the Prince of Wales.

The question as to what should be dispensed when "vaselin" is ordered, has been again raised. Mr. Martindale, one of *the* authorities on matters of dispensing pharmacy in this country, believes there is an unwritten law in most pharmacies that when ointments are prescribed which admit of being made white, or nearly so, and the base ordered is "vaselin," white paraffinum molle should be used. In further support of this opinion, he cites a resolution approved by a meeting of the North British Branch of the Pharmaceutical Society some eight years ago. It is beyond doubt that this practice is largely followed, and other pharmacists have supported Mr. Martindale's position. The alternative course, which has also its champions, is always to use the yellow variety of the ointment-base, following the custom that is observed in counter-trade, where the white preparation is supplied only on special request. Probably the discussion is not yet ended, but in any case it is not likely to much affect the general practice in the matter.

A city pharmacist was indicted at the Mansion House the other day for selling corn-paint, recommended to "remove corns without pain," minus the medicine-duty stamp of 1½*d.* value. The chemist made the singular defence that corns were not ailments, because they could be avoided by wearing large boots! This really humorous contention arrested the attention of the evening papers, which of course made a quantity of very amusing copy out of it. One of them said: "The chemist seems also to have contended that the article he sold, being a corn 'paint,' and not a corn 'salve,' was not a medical cure at all, but only a sort of decoration like rouge or violet powder!" The Lord Mayor decided, however, that corns were either ailments, diseases, or complaints, but did not specify which. A merely nominal fine was imposed, as there did not seem to be any intention to defraud the revenue.

PARIS LETTER.

Two Mercurial Commodities Handed Over to the Drug Trade—Experiments with Barium Salts—A Therapeutic Boom for Soda—A New Vogue for Chocolate—Crumb vs. Crust—Chloralose—Antiquity of Sterilized Water—New Preparations.

Two substances which have long had a ready sale in the Paris streets, and have been a source of considerable profit to itinerants, have recently been placed on the list of poisons which can be sold at retail by pharmacists only. The first of these is the sulphocyanide of mercury, whose property of swelling and elongating when burned led to its adoption by the prestidigitators of thirty years ago for that chemical toy of deathless popularity known as "Pharaoh's serpent." M. Planchon, who made the examination, said that this article might cause dangerous accidents if accidentally ingested, while the vapors of cyanogen, mercury, etc., given off from the burning material were extremely unwholesome.

The other indicted substance is a mixture of nitrate of mercury and starch which will enable the purchaser, as the fakirs strenuously assert, "to turn all of his pots and kettles into vessels of pure silver." It is a preparation with which the Parisian *paterfamilias* has amused his household for many years. M. Planchon stated that as the substance was often applied to knives, forks, and culinary articles from which it could readily be rubbed, it might give rise to unpleasant accidents. So neither mercuric nor mercurous nitrates will be sold hereafter except by druggists. The law, only now applied to these articles, has been in force since 1846. A couple of cases in which the mills of the gods ground slowly.

The toxicity of barium salts is well known. With a view to learning what are the phenomena of poisoning by them, MM. Pilliet and Marbec lately made a series of researches. They found that the chloride of barium, hypodermatically injected in quantities of one centigramme to each kilogramme of weight, produced in dogs vomiting, diarrhœa, albuminuria, convulsions, and contractions of the extremities. The autopsies revealed organic lesions, especially of the kidneys, and evidences of internal hæmorrhage.

Pharmacists have observed for some months past an increase in the number of prescriptions of bicarbonate of soda, alone or with other drugs, and that this alkali is prescribed in very much larger doses than formerly. They attribute the change to the impression made by Professor Huchard and others who have been recommending "intensive alkaline treatment" for certain affections. M. Huchard said that alkaline treatment did not determine debility and cachexia, as had been stated by Trousseau, and that so-called "alkaline cachexia" had no existence; that, in fact, the treatment was a "fortifier" and aroused organic combustion. He thought bicarbonate of soda "should be rehabilitated," and said that in the treatment of the hypersecretion of hydrochloric acid, physicians should give it in doses of 20 to 30 grammes. This "intensive alkaline treatment" is being much employed in diabetes, and is believed by some observers to be a preventive of diabetic coma. It is also used in the dermatoses determined by hyperacidity. Dr. Bardet said recently that doses of 5 to 10 grammes of bicarbonate of soda gave excellent effects in the conditions cited.

Chocolate pastilles are the subject of an excellent article by M. Péquart in *L'Union Pharmaceutique*. Substances, such as calomel, which must be incorporated dry, are mixed with the chocolate in a mortar, adding from time to time a judicious amount of flavored sugar. If the substance to be incorporated is bulky, or the chocolate is not rich in fat, butter of cacao may be added. The writer used two parts of butter to one part of the substance to be incorporated. The temperature of the mass should be kept as low as 30° C.; 25° is still better. Substances are best added in liquid form if possible, but a solvent must be used that will mix with the chocolate without modifying its appearance. The use of water, alcohol, and glycerin should be avoided. As a rule, fatty bodies which work well with butter of cacao are the best to use with chocolate. "Santonin chocolates" (which have a large sale) are best made by dissolving the santonin with five times its weight of castor oil at 60° C. The solution may be added while warm. Many pharmacists make their own chocolate pastilles, because the wholesalers here charge a somewhat elevated price for them as "fancy pharmaceuticals."

M. Cardin recently made the statement that the large number of physicians who prescribe the crusts of bread rather than its crumb for many gastric, renal, and other affections did so on mistaken grounds as to the chemistry of the two articles. He said that the stated reasons for giving preference to the crust were that it contained less starch, less fatty substances, and very much more dextrin than the crumb. This, says M. Cardin, is a great error, and he cites the following record of analysis (from the Dictionnaire des Falsifications) in proof of his statement:

	Crust.	Crumb.
Water	17.15	44.55
Azotized matter (insoluble)	7.30	5.92
Azotized matter (soluble)	5.70	0.75
Sugar and dextrin	3.88	3.77
Starch	62.58	43.55
Fats	1.18	0.70
Mineral matter	2.21	0.84
	100.00	100.00

The dose of anhydro-glycochloral, or chloralose, is stated to be 20 to 40 centigrammes. This is said to be sufficient to give tranquil sleep without any subsequent headache. Like all new hypnotics, it will not cause any "gastric disturbances or toxic symptoms," while it is of course superior to morphine or chloral. Chloralose is a product of the action of glucose or chloral anhydride.

Some of the contributors to the French pharmaceutical literature enjoy nothing so well as to demonstrate that some of the so-called "new things in medicine" are several centuries old. One of them has discovered that the use of sterilized water was well known in the year 1469, and this article does not owe its *début* to modern bacteriological discoveries. He finds that Margaret of York, who was living in Ghent in the year mentioned, was in the habit of diluting her wine with water that had previously been well boiled, cooled and settled. The next thing to be done is to find out how Margaret learned to do this, and there is a possibility that we will soon hear that sterilized water was an article in regular use by the early Assyrians.

New preparations in attractive pharmaceutical forms are constantly appearing. Some of them are really new combinations based on current prescriptions dropped by professors in medicine. Many of them are old preparations in a new form and christened with a new name. They have one great advantage: They are made by pharmacists and sold by pharmacists. The proprietors do not get the cream of the trade in this happy city.

BERLIN LETTER.

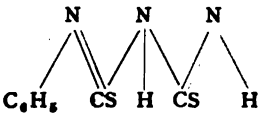
The Estimation of Pepsin—Peptonization or Solution—New Synthetical Antiseptics: Thiuret; Pixol; Formalin—A Pharmaceutical Note on Extract Myrtilli against Diabetes—Injections of Cinnamic Acid in Tuberculosis—Sugar-coated Creasote Pills.

A good deal of attention has been recently given to pepsin and the methods of determining its value. Owing to the fact that this ferment as prepared by modern processes is undoubtedly not a simple substance of definite composition, its estimation, accurately and satisfactorily, presents peculiar difficulties; nor is the task rendered more simple by the fact that we do not at present clearly understand what is the nature of its action. The clearing up of this problem is bound up with the elucidation of the constitution of albuminoids, and for this we have still to wait.

The peculiar usefulness of pepsin in the digestive process was primarily held to be its solvent action upon albumin and allied compounds, which, ingested mostly in an insoluble coagulated form, were rendered assimilable by the absorbent apparatus of the digestive tract through the action of the ferment. This view of its action was made the basis of the methods used in its valuation. The conditions which, so far as is known, obtain in the stomach—with regard to acidity, temperature, movement—were imitated in the laboratory, and attention directed to the time required to take up into solution such forms of albumin as white of egg and blood fibrin.

The recent work which has been carried out upon the subject has shown that apparently insignificant details of manipulation—comminution of albumin, frequency of stirring, etc.—exercise an important influence upon the results. But beyond this the development of our knowledge of the different stages in the action of pepsin upon albumin has had the result of somewhat changing the rationale of the testing process.

The list of synthetical antiseptics is not yet ended; one of the latest comers is a curious compound called "thiuret," which has the formula:



It is a bulky, odorless, crystalline powder, with feebly basic properties, almost insoluble in water but fairly readily soluble in alcohol and ether. In contact with weak alkalies, even in the cold, it gives off sulphur which in *statu nascendi* exerts a powerful antiseptic action.

Another substance of the same class is "pixol," a soluble form of wood-tar made by warming it with soft soap and 10-per-cent. potash in the proportions 3:1:3 respectively. The preparation is perfectly clear, dark-brown, and of the consistence of a thick syrup. With water it mixes in any proportion, giving non-greasy solutions which do not soil the hands or linen. As 5-per-cent. solutions contain only 4 per mille or less free alkali, they are not caustic. Bacteriological experiments showed the solutions to be equal in germicidal power to solutions of carbolic acid of the same strength.

Still another member of the synthetical antiseptica has been brought under notice as "formalin" or "formol." The preparation is a 40-per-cent. solution of formaldehyde $HCOH$, which under normal conditions is a gas. The solution is clear, colorless, and has a pungent odor. Experiments so far carried out show formalin to be a very powerful microbicide, similar in intensity of action to sublimate, but non-poisonous, and having the advantage of convenient application and ready conversion into the gaseous form, when its specific gravity is almost exactly that of air. Further, the gaseous compound is absorbed by solid bodies and condensed as paraformaldehyde. The preparation seems to be suitable for use as a food-preservative, only small proportions being necessary, so that the taste of the material is unaffected and its value as food in no way prejudiced.

In a previous letter reference has been made to the use of bilberry fluid-extract in diabetes. The papers which have appeared on the subject have excited considerable interest, and the preparation seems likely to receive an extensive trial. This much at least would appear established, namely, that the treatment is frequently followed by an important diminution in the amount of sugar excreted. Yet curiously enough, as already stated, the drug itself contains considerable quantities of grape sugar both in the free state and as glucoside, as well as carbohydrates which readily yield sugar. For this reason the quantity of sugar secreted by the patients usually increases somewhat at first, and only diminishes some days later. It is probable, therefore, that more satisfactory results would be produced by an extract from which the saccharine constituents had been removed. As regards the free sugar, and other carbohydrates which yield it readily, little difficulty is experienced, according to Dr. Voswinkle, but the separation of the glucoside is not easy.

Among the remedies which have been employed against tuberculosis by injection must be classed Peru balsam, which in the hands of Professor Lauderer yielded satisfactory results. The investigator was induced by the success of the treatment to try cinnamic acid, believing that with it, as the active constituent of Peru balsam, yet better results would be obtained. Physiological and histological experiments made with the compound showed that, introduced into the circulation by intravenous injection, it brought about an increase in the number of white corpuscles in the blood which amounted to three times, and in isolated instances to six and eight times, the normal. In many respects, therefore, the effect of the injections was similar to that of tuberculin, but differed in tending to cicatrization and in being free from undesirable by-effects.

Investigation with the hæmoglobinometer showed further that no disturbing effect was produced upon the amount of hæmoglobin, such as tuberculin produces.

The dosage adopted was ordinarily 3 to 6 minims of a 5-per-cent. emulsion; even these small doses improved the appetite, sleep, and general feeling, and when the patients were very weak it was found advisable to use a 1- to 2-per-cent. emulsion. As a rule the injections were made twice a week, but when the more dilute emulsions were used the doses were given more often, in some cases daily.

This reference to the treatment of tuberculosis recalls the use of creasote for the same purpose. Klisch describes a method of preparing sugar-coated creasote pills which is not difficult to carry out, and yields a satisfactory product: 11 parts of gelatin and 5 of sugar are dissolved in 24 parts of water, and while still warm emulsified (in a warmed mortar) with 10 parts of creasote. On addition of 15 parts of liquorice powder a mass is obtained which, after a few hours, can be readily rolled. In order to coat them, the pills are moistened with syrup (not mucilage) and turned into a round tin box containing a thick layer of powder made of starch 8 parts, gum 2 parts, and sugar 2 parts. After shaking for a minute or so, the excess of powder is separated. The operation can be repeated two or three times, and a polish given by agitation *secundum artem* in a long and narrow flannel bag. These pills have the advantage of being smaller than when coated with sugar by machinery.

CHICAGO LETTER.

At the League meeting, Friday, April 14th, W. J. Morris was elected president, Dr. Patterson vice-president, A. Obermann treasurer, Fred. Schmidt secretary; and the Executive Committee, with W. Bodemann as chairman, was reëlected.

The May meeting of the Inter-State League promises to be full of interest. The Chicago League is determined to test the value of the League platform, and have the same either enforced or further attempts abandoned. The League is absolutely powerless if the proprietors refuse to place cutters on the cut-off list. Retailers are urged to organize and to report cutters. The Chicago retailers *did organize*, and the retiring chairman, Mr. Martin, deserves great credit for his faithful work; and the Chicago retailers *did report*—and the jobbers protested—and the proprietors refused to put on cut-off list, but sold to cutters direct, giving the jobbers the *go-by* in the deal—and there the matter stands. The jobbers claim that certain retailers should not be placed on cut-off list, because they started to cut in self-defense. Was cutting ever done without some motive, good or bad? The League was started against cutting for any reason; and if jobbers and proprietors do not wish to enforce the platform, they should not pretend to do so.

The Burke bill, compelling patent-medicine manufacturers to say what is (and what *is not*) contained in their nostrums, has created as much sensation as similar bills did in Illinois and New York. The A. P. A. should take up this matter, reach intelligent conclusions, and then inaugurate the fight in all legislatures at the same time. In that way the "Great Discoverers of Scientific Triumphs" will be compelled to split their forces—and that means to split their boodle,—and decency and common sense may have a winning chance.

Chicago has the prospect of a new telephone company. The druggists are now asking themselves how much they need their phones, and how much they (the druggists) have to pay to accommodate the dear public. Each druggist would fare better if he would patronize a telephone station for his business, and give the dear public the same privilege. That would relieve the wires of a great deal of unnecessary telephoning, and would improve the service wonderfully—although it might reduce the revenues of the telephone company a bit. At present the service is simply miserable, time-robbing instead of time-saving—spoils good-nature, breeds profanity, and raises mischief everywhere. If the druggist throws out the telephone, he has at least a chance for peace and happiness.

A singular incident recently happened to show how careful merchants should be to specify a certain express company. A druggist sent a parcel east per American Express, and paid 30 cents. The same goods were exchanged, and returned by Adams Express, which does not deliver south of Forty-third street. The result was that the express charges per Adams were 60 cents, against 30 cents per American. Object lesson: Specify American Express, or you will have to pay more for delivering from Chicago to your place of business than for the original charges from the East to Chicago.

Trusts and monopolies on all sides only emphasize for druggists the importance of a close organization for defense.

OLD LINER.

Chicago, April 18, 1893.

NEW YORK LETTER.

The month of March, contrary to the general expectation, resulted in a larger volume of business in the wholesale drug trade than could be recorded for any of the early months of 1893. Receipts of stocks from abroad have been very great—and so also has been the demand, so that our accumulations are not any too great. Speculation has been entirely absent, although in some of the staples the rapid advance in price was tempting to those of a speculative turn of mind. The temptations, however, were resisted, and only a legitimate business was carried on. There have been some important advances, among which may be mentioned—

Opium.—In my letter of last month I was compelled to report that, owing to a lack of confirmation of the news to the effect that frosts had injured the growing crops, the market had at that time reached its limit and was very weak. This continued for a part of the month, when suddenly the reports of frosts seemed confirmed to such a degree that opium within a few days more than doubled in value. The highest point reached, in cases, was $3.75 per lb. From that there has been a reaction, so that our market is now considerably lower and weak. The constantly repeated reports from the section of production seemed to excite some suspicion as to whether any of them were true. This caused timidity on the part of holders, who seem now satisfied to sell at closer margins of profit. As I write, rumors again reach us that former reports of frosts are true, and that the market will all at once wake up to the fact that opium is still low in price. These conflicting reports come and go, and it is impossible for anyone to prognosticate the future of this article. The very heavy advance in opium caused two advances in the price of

Sulphate of morphia, action being taken in both cases by our domestic manufacturers; foreigners naturally falling into the wake. There is no weakness on the part of manufacturers of morphia, but there is a spirit of firmness that indicates no prospective decline.

Quinine.—The concerted action on the part of both foreign and domestic manufacturers, as to limitations on time of delivery for futures, seemed to indicate that at last they had come together in some general agreement. This, however, cannot be fully confirmed. We only know that neither the domestic nor foreign manufacturers will contract ahead more than sixty days. Quinine has stiffened very materially in price, having advanced about two cents an ounce. The outside holdings in second hands have been very greatly reduced, as the consumptive demand has been great. Receipts of foreign quinine are all on contracts at advanced prices at present; and there can be no doubt that, with the increased demand that must now very shortly reach us because of the opening of the spring season, higher prices will be realized. Druggists would make no mistake to lay in their stocks of quinine, and pharmaceuticals prepared with quinine, at once.

Buchu leaves have suddenly taken a decline, owing to the arrival of unexpected supplies. During the last month, in answer to cable inquiries to the Cape of Good Hope, the point from which buchu leaves are shipped, information reached this city that there were no supplies to be had, nor could any be expected until the new crop was gathered. Greatly, therefore, to the surprise of everybody, there suddenly came to the London market a supply of about one hundred bales; and while this amount under ordinary circumstances would not be considered large, it was enough to break the market, and buchu leaves of prime quality can be bought to-day at ten cents a pound less than when my report of last month was written.

Coca leaves remain in very short supply; in fact, there are little or none of the broad-leaved variety of the small Truxillo leaf, though supplies of inferior quality are abundant. There are no advices of any important shipments coming forward of the broad-leaved variety.

Cocaine.—Owing to the new ruling on the part of the Custom House relating to duty, this article has very greatly advanced in price, and, unless supplies of coca leaves and of crude cocaine reach the markets very soon at reasonable prices, a still greater advance in the price of muriate of cocaine must follow.

Cod-liver oil has suffered a further decline, owing to large stocks and the approach of the end of the season.

Ergot.—The demand has increased materially, but owing to large stocks no advance in price has taken place.

Golden Seal.—There have been important sales of this article during the past month, for export. Stocks are not large, aud, should this demand continue as it is believed that it will, very much better prices will be realized for this important root in the very near future.

Celery Seed.—Stocks are becoming very rapidly reduced. Prices are advancing, and there is but little doubt that celery seed will sell at least five cents a pound higher before the new crop can possibly make its appearance.

Oil of Lemon.—The demand has not yet set in for summer use, and, as stocks are large, prices continue to rule low.

German lupulin is somewhat lower, owing to decreased consumption.

Lycopodium is reported as absolutely wanting in Russia. It has advanced here about ten cents a pound, and is very firm at present quotations.

Gum asafœtida, of good quality, is very much sought after. Of low grade there is an abundant stock and at cheap prices; but for the higher grades full prices must be paid.

Tinnevelly senna continues to advance in price.

Insect flowers are reported higher from Dalmatia. It may therefore be anticipated that before long, pure insect powder will be ranging at higher quotations.

New York City, April 8, 1893.

AN APPEAL FOR CO-OPERATION IN THE STUDY OF INSECTS.

To Wholesale and Retail Druggists, and Members of the Fraternity generally: I should be glad to receive from any member of the drug trade a sample of "worm-eaten" drug containing the larvæ or adult form of any insect attacking same, for the purpose of identification and study of the insect. It is my purpose to extend a paper read at the last meeting of the Kansas Pharmaceutical Association, on "Insects Attacking Drugs." I should like to make a supplementary report to this paper, and anything the pharmacists can do to aid in this matter will be very acceptable.

In sending specimens, a small quantity of the attacked drug (if in bulk) or an attacked package (if so put up), together with many specimens of the insect, carefully wrapped in tissue paper, should be securely packed and forwarded by mail. Address: Prof. L. E. Sayre, University of Kansas, Lawrence, Kas.

April 15, 1893.

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Second Vice-President, Sydney P. Watson, Atlanta, Ga.

Third Vice-President, Wm. H. Averill, Frankfort, Ky.

Treasurer, S. A. D. Sheppard, Boston, Mass.

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Local Secretary, Henry Biroth, Chicago.

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Officers of the Council—James M. Good, chairman; H. M. Whitney, vice-chairman; George W. Kennedy, Pottsville, Pa., secretary.

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Committee on Scientific Papers.—C. T. P. Fennel, chairman, Cincinnati, O.; F. G. Ryan, secretary, Philadelphia; Charles Caspari, Jr., Baltimore, Md.

Committee on Prize Essays.—Not yet appointed.

Committee on Pharmaceutical Education and Legislation.—R. G. Eccles, chairman, Brooklyn, N. Y.; L. C. Hogan, secretary, Chicago, Ill.; H. M. Whelpley.

Committee on the Revision of the U. S. Pharmacopœia.—H. M. Whelpley, chairman, St. Louis, Mo.; H. P. Reynolds, Plainfield, N. J.; Edw. W. Runyon, San Francisco, Cal.; Edward V. Zoeller, Tarboro, N. C.; Henry Canning, Boston, Mass.

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Henry R. Gray, Montreal, Can.; Jas. A. Schell, Aberdeen, Miss.

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IMPORTS OF DRUGS, ETC., AT THE PORT OF NEW YORK, FOR THE MONTH OF MARCH, 1893.

Ammonia, 20 casks, 4 drums, 4 boxes; sal ammoniac, 10 casks; carbonate of ammonia, 100 casks; muriate of ammonia, 30 casks; sulphate of ammonia, 16,605 bags, 539 packages.

Albumin, 211 cases, 100 casks, 10 packages, 63 bags; blood albumin, 27 casks, 67 kegs, 7 cases; egg albumin, 36 cases.

Acid, 76 cases.

Alkali, 50 kegs; refined alkali, 30 tierces; ammonia alkali, 274 casks.

Anilin oil, 147 drums, 10 casks, 26 bbls.; anilin salts, 212 casks, 166 bbls., 625 cases.

Aloes, 67 bales, 21 boxes, 1 case.

Attar of roses, 4 cases.

Aërated waters, 190 bbls., 50 half-bbls., 15 cases, 24 boxes.

Arsenic, 110 casks, 789 bbls., 177 kegs, 80 cases; ground arsenic, 25 casks.

Asafœtida, 47 cases.

Anise seed, 35 bags, 25 packages.

Absinthe leaves, 6 bales.

Alizarin, 84 packages, 24 cases, 96 casks, 7 bbls.; anilin dye and alizarin, 101 packages.

Balsam of copaiba, 12 cases.

Borax, 3,975 sacks, 3 casks.

Buchu leaves, 2 bags, 25 bales.

Bark, 337 bales, 1 case.

Boracic acid, 62 casks.

Barium salts, 25 casks.

Chemicals, 2,343 casks, 465 cases, 769 packages, 10 drums, 1 box, 6 bbls.; colors and chemicals, 262 packages.

Calamus, 6 cases.

Citric acid, 1 cask.

Carbolic acid, 95 casks; carbolic acid crystals, 77 casks; solid carbolic acid, 26 cases, 120 bottles, 159 casks, 105 packages.

Creasote oil, 112 bbls.

Cacao butter, 152 cases, 18 casks, 100 packages, 183 bales, 496 bags.

Cuttlefish bones, 50 packages.

Chloroform, 40 drums.

Cassia, 102 cases, 150 boxes, 4,128 packages, 8,500 mats, 500 bales; cassia oil, 30 cases; cassia buds, 200 boxes, 100 cases; cassia vera, 145 packages; Saigon cassia, 100 cases; Saigon cassia rolls, 100 cases; cassia lignea, 1,000 bales; broken cassia, 1,500 mats, 3,230 bales.

Citrate of lime, 75 casks.

Camphor, 726 cases, 2 casks; camphor oil, 479 cases.

Cantharides, 76 cases.

Carboleum, 525 drums.

Cubebs, 180 bags, 26 packages; cubeb stalks, 17 packages.

Creolin, 26 cases.

Castor beans, 159 bags.

Capsicum, 245 bags.

Cod-liver oil, 50 cases, 60 bbls.

Cologne, 2 cases.

Cardamoms, 6 cases.

Crystal carbonate, 782 bbls.

Cocaine, 1 case.

Copper sulphate, 400 kegs.

Colocynth, 3 casks.

Drugs, 214 packages, 94 cases, 36 casks, 53 bales, 1 box, 1 bag; dry drugs, 20 bags.

Druggists' sundries, 3 cases.

Dried blood, 5,130 bags.

Dandelion root, 60 packages.

Essential oil, 411 cases, 50 boxes.

Eau de Cologne, 40 cases.

Fuller's earth, 7,304 bags, 10 packages; fuller's earth powder, 5 cases.

Fish sounds, 25 bags.

Fish bladders, 15 bags.

Glycerin, 323 drums, 30 bbls., 489 casks.

Gum damar, 98 bags; gum myrrh, 7 bales; gum tragacanth, 129 bales; gum senegal, 45 bales, 75 bags, 25 cases; gum asafœtida, 18 cases; gum sandrac, 2 cases; gum Benjamin, 6 cases.

Galls, 197 bags, 10 cases; gallnuts, 328 cases, 315 boxes; gall extract, 15 bbls., 5 casks.

Gentian root, 301 bales.

Herbs, 103 bales, 10 cases, 1 bag, 6 packages.

Haarlem oil, 71 cases.

Iodine, 81 bbls.

Insect powder, 50 bbls.

Ipecac, 4 bales.

Jalap, 108 bales, 46 bags, 40 sacks.

Leaves, 55 bales, 4 cases.

Lanolin, 25 cases.

Lavender flowers, 10 bales.

Liquorice, 40 cases; liquorice wood, 3 bales; liquorice root, 1 case, 14,861 bales; liquorice paste, 40 cases.

Lime oxide, 200 bbls.

Medicines, 105 cases, 5 casks.

Malt extract, 1,999 cases, 44 casks.

Muriatic acid, 5 cases.

Musk, 1 case, 2 boxes.

Myrbane, 30 cases, 2 drums; myrbane oil, 20 cases; myrbane salts, 8 casks.

Milk sugar, 43 cases.

Myrrh, 2 bbls.

Magnesia, 4 cases.

Morphia, 14 packages.

Nux vomica, 265 bags.

Natrium, 2 cases.

Opium, 207 cases; opium and gum, 12 cases.

Orris root, 48 seroons, 22 bags.

Oxalic acid, 182 casks.

Orange leaves, 50 cases.

Orange-flower water, 80 cases.

Oil of bitter orange, 4 cases.

Oil of sweet orange, 50 cases.

Oil of bergamot, 10 cases, 20 boxes.

Oil of lemon, 103 cases.

Oil of olives, 55 cases.

Oil of wintergreen, 15 cases.

Perfumery, 384 packages, 203 cases.

Potash, 366 casks, 50 cylinders, 15 bbls., 140 drums, 5 kegs, 1 case; chlorate of potash, 2,695 kegs, 100 casks, 17,000 bags; sulphate of potash, 4,650 bags, 5 casks, 2 sacks; prussiate of potash, 37 casks; bichromate of potash, 75 casks; carbonate of potash, 40 casks; nitrate of potash, 4 cases.

Peruvian bark, 2 bales.

Pyrogallic acid, 2 boxes.

Picric acid, 80 cases.

Phosphorus, 110 cases.

Precipitated chalk, 25 bbls., 10 casks.

Quinine, 429 cases.

Roots, 483 bales, 23 cases, 4 casks, 140 bags.

Rape oil, 267 bb's.

Rose-water, 140 cases.

Sponges, 2,012 bales, 4 bbls., 207 cases; refuse sponge, 10 bales; sponge clippings, 17 bales.

Sarsaparilla, 588 bales.

Snake root, 1 box.

Surgical wood-wool, 5 cases.

St. John's bread, 100 bales.

Salts, 10 casks, 5 cases; chemical salts, 14 cases.

Soda, 16 packages; soda salts, 20 casks; acetate of soda, 9 casks; chlorate of soda, 350 kegs; nitrate of soda, 40,422 bags, 1,709 tons, 2 cases; arseniate of soda, 22 casks; bicarbonate of soda, 100 casks, 250 kegs; bichromate of soda, 110 casks; sal soda, 50 casks; sulphide of soda, 1 bbl.

Skeletons, 2 cases.

Strontia, nitrate of, 31 casks.

Tinctorial extract, 220 cases, 170 casks.

Tartar, 479 casks, 11 packages, 97 hhds., 74 bbls., 171 bags, 163 sacks.

Taraxacum, 19 bales.

Triticum repens, 132 bags, 197 bales.

Tannic acid, 2 bbls.

Handbook of Insanity: For Practitioners and Students. By Dr. Theodore Kirchhoff, Physician to the Schleswig Insane Asylum, and Privat-docent at the University of Kiel. Illustrated with eleven plates. Octavo; 362 pages. Price, elegantly bound in maroon parchment muslin, $2.75; in flexible leather, gilt top. $3 50.

This is the first number of a series of books which William Wood & Co. of New York are publishing under the general title of "The Medical Practitioners, Library," It is divided into two parts: the first The General Part; the second The Special Part. The first contains: The Anatomical Basis and the Location of Mental Disturbances; Classification, Importance, and Mode of Action of the Causes of Insanity; The Signs of Mental Disorders; The Course of Mental Disorders; The Diagnosis of Mental Disorders and their Border Lines; The Treatment of Insanity; The History of Insanity.

The second part considers: The Classification of Insanity; Simple Mental Disorders; Mental Disorders Associated with Permanent Anatomical Changes in the Brain or with General Diseases.

The chapter on The Treatment of Insanity covers prevention and psychical treatment; and under Bodily Treatment (1) general standpoint and modes of treatment, (2) hypnotics, (3) treatment of important symptoms; concluding with comments on asylums and their advantages and the treatment of convalescents.

The book is well arranged, though it might have been more thoroughly indexed for reference. It is a modern and thorough presentation of the existing knowledge of this department of practice.

The Literary Northwest for April, 1893.

This sprightly journal contains a gathering of articles which are educational, entertaining, poetic, with enough of fiction to interest the reader who craves it.

It is published by the D. D. Merrill Co., St. Paul, Fifth and St. Peter Sts., and has an eastern office at 74 Fifth Ave., New York. Its subscription price is $2.00 a year, or 20 cents per number. It is thoroughly well and tastefully printed and illustrated..

Among its April contents are an article on the Past and Future of Medicine, by William Dudley Foulke, and one on the Cholera Outlook in '93, by Albert Schneider, M. D. Dr. C. N. Hewitt's "How Are You?" contains good advice to take stock of oneself physically that one may see if he be in sound health. The Doctor believes that in the way of nature old age should find one with scarcely diminished vital capital, and that this period of life should progress by easy and enjoyable stages—stages of physical rest and mental occupation—to the age of at least eighty years, and to euthanasia the normal end of a healthy life.

The following are complete contents for April: A Banana Merchant; A Trip Through the Suez Canal (illustrated), by Edward R. Sanford, Jr.; Reserved (poem), by Alice Hamilton Rich; In the Boat of My Dreams (illustrated poem), by Henrietta Jewett Keith; Our Dead Historian (with portrait), by Mary J. Reid; My Model (poem), by Andrea Hofer; The Mystery of the French Chateau, by Edward Carpenter; Columbus (poem), by H. L. Gordon; My Autographs (illustrated), by John Henderson Garnsey; Faith (poem), by Wm. Fessenden Prowd; The Past and Future of Medicine, by William Dudley Foulke; The Cholera Outlook in '93, by Albert Schneider, M.D.; How Are You? by C. N. Hewitt, M.D; I Dreamed Last Night (poem), by Sid Dunning; A Northeaster, by T. H. Kirk; The Rise and Fall of a City, by Mrs. Charlotte M. Vaile; Tennyson's "In Memoriam," by Alice Ames Winter; Indian Medicine and Superstition, by Elaine Goodale Eastman; The Sultan's Holiday (poem), by Florence May Alt; The Women of the Regency, by L. D. Ventura; False Hearts (poem), by St. George Best; Little Tod, by Richard Saxe Jones; Book Reviews, by Mary J. Reid.

A Book of Outdoors.

"Outdoors" is the title of a refreshing little book which is a pleasure to read. The covers are in ten water-colors, and inside are articles on Lawn Tennis, by F. A. Kellogg; Yachting, by George A. Stewart, successor to Edwin Burgess; Cycling, by Julian Hawthorne; Football, by Walter Camp; Baseball, by J. C. Morse; Horsemanship, by H. C. Merwin; Rowing, by Benjamin Garno; Canoeing, by C. Bowyer Vaux; a collection of authoritative articles on healthful outdoor pleasures, illustrated by Copeland, Beals, Gallagher, Young, and Shute. This book, published by the Pope Mfg. Co., of Boston, for the benefit of the Columbia bicycle, contains articles without any advertising in them. Sent by mail to anybody for five two-cent stamps.

Manual of Chemistry: A Guide to Lectures and Laboratory Work for Beginners in Chemistry. By W. Simon, Ph.D. Fourth edition, thoroughly revised. With forty-four illustrations and seven colored plates, representing fifty-six chemical reactions. Philadelphia: Lea Brothers & Co. 1893.

We shall be glad to give this valuable and popular work a notice indicative of its merits in the next number of the BULLETIN.

AND HE DID.

He: "Doctor, every time I raise a hand I'm completely knocked out with pain."

Doctor: "Then you had better play some other game."

MASHER AND MAID.

" I have a mind," the masher cried,
While speaking to his belle,
" To ask you, Maud, to be my bride,
For, oh, I love you well!

" I have a mind to take your hand
Within my finger tips,
And while I hold it there trepanned,
To press it to my lips.

" I have a mind that I will find
In yours a level head;
And oh, my dear, I have a mind——"
" You've no such thing," she said!

A VALUABLE FRIEND.

SHE—Doctor Reaper tells me that he is not only your family physician, but a warm friend of yours.
HE—Oh, yes, indeed, and I can recommend him very highly.
SHE—Has he ever treated you?
HE—No, not personally. But he was very successful with a wealthy aunt of mine. —*Life.*

A GRAVE SYMPTOM.

Physician: Have n't felt well lately, eh? What seems to be the trouble?

Patient: I don't rest well—last night I dreamed that a Broadway car stopped to let me get on.

Physician: My dear sir, this is serious—you must have complete relaxation from business, or I will not answer for the consequences!

DIVIDING HER PATRONAGE.

Druggist (to Mrs. Postedge, who never buys anything but stamps): Don't you ever use drugs?

Mrs. Postedge: Oh, yes! But I like to divide my patronage. I buy my stamps of you, and my drugs of Dr. Pessels, across the Avenue.

"What! Smoking, Fred? Thought your doctor told you it would kill you?"
"So he did, and I quit. But at the end of a week I wanted to die, so I'm smoking again."
—*Life.*

HE WASN'T IN IT.

They built a fine church at his very door—
He wasn't in it;
They brought him a scheme for relieving the poor—
He wasn't in it;
Let them work for themselves, as he had done.
They wouldn't ask help of any one,
If they hadn't wasted each golden minute—
He wasn't in it.

A carriage swept down the street one day—
He was in it;
The funeral trappings made a display—
He was in it;
St. Peter received him with book and bell,
"My friend you have purchased a ticket to—well,
Your elevator goes down in a minute."
He was in it.

A DRUG CLERK'S LIFE.

A drug clerk's life, though I've not been one long,
Is a life I don't fancy; *ergo* this song,
He gets up at seven and opens the door,
And sometimes perhaps even sweeps up the floor.
Some bottles are empty, and well does he know
They must be filled up to make a neat show.
Seidlitz powders are gone, he sees with a sigh,
And magnesia, too; he thinks he will die.
There are patrons to greet with professional look,
Who must never observe he refers to the book.
Disposed of at length, he rolls up his sleeves,
And sits down to his labor of grinding up leaves,
When a rap on the counter very plainly does show
That some one, impatient, considers him slow;
So into the shop, to find an old tramp
Who gallishly asks for the loan of a stamp.
Back to his toil, overwhelmed with disgust,
He reflects on his lot as one very unjust,
The wages are small, as drug clerks all know;
He hasn't the price to go to a show.
The hours are long; he has never a chance
To see his best girl or go to a dance;
But night in and night out he works to eleven,
So he surely should get a front row in heaven.

—*Pacific Drug Review* (*Meyer Bros. Druggist*).

Excerpt from the Proceedings of the Pharmaceutical Society.

Dr. Friedländer on Pepsin.—The speaker objected to the conclusions arrived at by Dr. Friedr. Witte at the previous meeting (*Pharm. Centralh.*, 34, 92), and stated that he, the speaker, did not wish to see the test of the Pharmacopœia lowered. On the contrary, in exacting complete peptonization of the albumin employed, a greater rigorousness must be observed. The objectionable features of the present method are found by the speaker to consist in the varying comminution of the albumin, even when using the sieve; furthermore, in the unsettled number of the agitations which must be made during the period of test. Both these factors have an important bearing upon the issue of the examinations. To exclude these sources of error, Friedländer has proposed the employment of liquid albumin, fixing the temperature at 500° C., and limiting the action of the pepsin to six hours—testing the resulting peptonization with nitric acid.

With respect to the attainable power of pepsins, Friedländer did not mean to fix the maximum of strength at 1:4000. In fact, seven years ago he had received from Parke, Davis & Co., of Detroit, a sample of a 1:5000 pepsin. Since that time this firm has succeeded in producing much stronger pepsins, and Friedländer possesses specimens of 1:20,000. But this does not exclude the existence of even stronger pepsins. All these preparations form clear solutions, are odorless and non-hygroscopic.

With respect to the preparation and employment of such pepsins, Friedländer is skeptical. It is impossible to surpass an absolutely pure product. The constant raising of pepsin standards seems arbitrary to Friedländer, and only proves to him the regeneration of the pepsin on digestion. But this regeneration only indicates to him that it is possible, with small quantities of really pure pepsin, to digest incalculable quantities of albumin, provided that we avoid disturbance of molecular motion as a result of increased concentration of the digestive liquid.

The second speech of the evening dealt with a communication of Dr. H. Kleesattel, of Neu-Ulm, on *Muira Puama*—discussed by Dr. J. Holfert.

Muira Puama is the name of a Brazilian drug (stems and roots) which possesses an excellent reputation as a remedy in its native land. It has not yet made its appearance on the market, but the drug was obtained not so very long ago by E. Merck, of Darmstadt, and tested therapeutically by Prof. Goll, of Zürich. He showed that the drug is a mild tonic, stimulating the brain and spinal marrow without causing injury. As an aphrodisiac, Muira Puama is indicated only in individual cases of impotence—a nervous ailment often difficult of diagnosis and oftener almost incurable. The remedy is a tonic of the central nervous system, and recalls the action of quinine and condurango, although the spicy taste of the latter two is different. Appetite was stimulated, digestion improved, and after several weeks' employment the healthy appearance of the men was striking, as after well borne iron remedies, but without congestions. The urine secreted during its use had an aromatic odor, imparted by products of metamorphosis, as in using the balsamic resins. Undesirable collateral or after-effects did not ensue. During the use of the remedy, abstinence from alcoholic beverages and irritating spices was enforced.

According to the foregoing report, the drug seems to assume a certain pharmacological importance, and accordingly Kleesattel considered its pharmacognostic examination fitting and requisite.

The investigated material consisted of dicotyledonous stemlets and roots. The little stems possess a length of 20 to 50 cm. and a sectional diameter of 5 to 15 mm. The length of the roots varies between 15 and 35 cm. A peculiarity which at once attracts attention on regarding the pieces of stem and root is the numerous nodes at certain places in the wood. The color of the body of the wood is not uniform. While the wood of several little stems and the adhering roots possesses a bright yellow color, in others there is a feeble reddish-brown, a pronounced red-brown, or, finally, a gray-brown tint. Often in one and the same piece, the color of the wood shows all the foregoing variations. The color of the root-wood is usually darker than that of the accompanying stem-wood. The color of the bark is the same in stem and root, varying from a dirty clay color to a grayish brown. Where the epidermis is still present, the bark exhibits a dull lustre. In all parts, fine longitudinal rugosities are to be observed. The root-bark exhibits numerous black spots (caused by groups of fungoid mycelia) of the size of a period. The spots also appear on the stem-bark, but only here and there.

Kleesattel then enters further into the anatomical peculiarities of the drug. On microscopical examination it was found, amongst other things, that the nodes of the wood were very probably the consequence of a growth of fungoid mycelia. The brown layers of tissue found within the wood at the places mentioned, consist chiefly of parenchymatous elements which are abundantly filled with tannin-like (brown) contents. Only when very powerfully magnified (350-fold) was it discovered that the brown homogeneous contents were completely intersected by extremely delicate, finely ramifying hyphæ.

With respect to the botanical identity of the drug, the author believes he has found in its woody structures distinguishing features which establish it as *Liriosma ovata*, Miers.—*Pharm. Centralh.*, No. 11, 1893, p. 150.

New Hypnotics.

The following compilation of brief definitions is taken from *Notes on New Pharmaceutical Products*, February, 1893, and is interesting as bringing together in terse comparison the whole list of analogous new remedies of the hypnotic class.

Amylenhydrate (syn., Dimethyl-ethyl-carbinol).—A colorless, heavy liquid, soluble in 10 parts of water, and readily in alcohol. It is better thought of and more used in Europe than in this country; it is said to rank between choral and paraldehyde in hypnotic effect, being less dangerous than chloral, and less offensive to take than paraldehyde. Dose, 30 to 60 minims; best administered in capsules, or in wine or beer. It is also used for whooping-cough, the dose for children being 3 to 5 drops in water with a little raspberry syrup.

Bromal Hydrate (syn., Tribromo-acetic-ortho-aldehyde).—Analogous to chloral hydrate; occurs in colorless crystals, very deliquescent; odor like chloral; soluble in water. It is more active than chloral, but causes nausea and diarrhœa. Dose, 2 to 5 grains. Not much used; in fact, it is hardly known, and stands little show with so many excellent hypnotics to keep it in the background.

Chloralamide (syn., Chloral-formamide).—Occurs in small crystals, colorless and odorless; soluble in 20 parts water and in 1½ parts alcohol; tastes mildly bitter or salty. Produces sleep in 20 to 40 minutes, lasting six to nine hours; is free from evil side or after-effects, and does not have cumulative effect or cause a habit. Dose, 20 to 60 grains; best administered in solution (30 grains dissolved in 2 drachms tr. cardamom comp., and 1 drachm each syrups orange and raspberry added); must not be heated, or will decompose.

Chloral-ammonium (Trichlor-amido-ethylic-alcohol).—Occurs as a white crystalline salt; soluble in water, but not stable; the product is often split up even in the dry state. Is said to combine the effects of urethane and chloral, and to be less dangerous than the latter; it does not disturb the stomach. Dose, 10 to 30 grains. Not much used, and easily dispensed with so long as better hypnotics are available.

Chloralimide.—Prepared through the action of heat on chloral-ammonium; occurs in colorless and tasteless needles; very stable—not affected by moisture, light, or heat; is slightly soluble in water, more in alcohol, readily in ether. Was introduced as a substitute for chloral, and has been urged as a substitute for chloralamide, but has not justified either claim, and is practically discarded now. Also acts as an antipyretic in small doses, 4 to 6 grains; as a hypnotic was recommended in 5- to 30-grain doses.

Croton-Chloral (syn., Butyl chloral). — Occurs in white, lustrous scales; soluble in about 50 parts of water, but readily in alcohol. Recommended as especially useful in neuralgias. Dose, 2 to 15 grains; best given in divided doses of 2 or 3 grains in pills or capsules, or made into a syrup, 15 grains to the ounce.

Hypnal.—A compound of chloral and antipyrin, in the proportion of 47 parts of the former to 53 of the latter. Can be prepared readily without chemical process, by mechanical mixture. Occurs in rhombic crystals, is readily soluble in water, and exerts good hypnotic effect —although it is not free from harmful side- and after-manifestations. Dose, 15 grains average, in aqueous mixture, with some tincture and a flavoring syrup. Very little used.

Hypnone (syn., Acetophenone, Phenylmethylketone).—Occurs as a colorless, oily liquid, with a bitter almond odor and strong taste. Introduced principally on the recommendation of Dujardin-Beaumetz; has done good service, but has so many untoward characteristics, and is often so unreliable, that it is very little used. The dose is variously stated as from 1 to 8 minims; it has a caustic effect in the mouth, and must therefore be administered in capsules with oil; in divided doses of 1 minim it may be taken in mixture with syrup or oil, flavored with peppermint. It is practically insoluble in water.

Metaldehyde.—This product is chemically apparently identical with paraldehyde; but it occurs in crystal form, and the difference in its chemical composition, however slight, has not made it superior to paraldehyde as a hypnotic. It is insoluble in water, and only slightly in alcohol. It has been used to some extent, in doses of 2 to 8 grains, but with so little advantage that it has fallen from notice.

Methylal (syn., Methyldimethyl-ether).—A colorless, volatile liquid, freely soluble in water and alcohol. Has been used with some success as a hypnotic in violent conditions of insanity and in delirium tremens. Dose, 15 to 60 minims in aqueous solution with syrup; also subcutaneously applied, 1 to 2 drops diluted in 10 parts of water. Methylal is a "back number," having outlived its term of usefulness since so many new and superior hypnotics have been introduced in late years.

Rubidium-Ammonium Bromide.—Occurs as a whitish crystalline powder or granular crystals, readily soluble in water; recommended as a substitute for potassium bromide. Dose, 60 to 90 grains per day in divided doses; best administered in mixture of syrup of orange or lemon. Has not come into much use, although enthusiastically recommended from good sources in Europe and in this country.

Somnal.—An alcoholic solution of chloral and urethane; occurs as a clear liquid, and gives a burning taste in the mouth. Dose, 15 to 30 minims, in alcohol solution, wine or beer. It produces sleep in about thirty minutes, and has been extensively used and praised for its good effect. It is, however, an ordinary proprietary mixture, not a definite chemical compound, and as this knowledge has spread it has lost caste and is falling into disuse.

Sulphaldehyde (syn., Thialdehyde).—Occurs as an oily liquid, with an offensive odor. Is related to paraldehyde, and through experiments on frogs has proved to exert much stronger hypnotic effect than that product. So far as known no regular clinical trials have been made with it, and it is doubtful if it will ever find therapeutic application.

Sulphonal (syn., Diethylsulphondimethyl-methane).—Occurs in colorless, prismatic crystals, odorless and tasteless (because insoluble); soluble in about 15 parts of boiling water, and in about 500 parts cold water, but more soluble in alcohol. It is slow in producing sleep, due to its insolubility, and it sometimes fails altogether, because eliminated from the system before dissolved. Care should be taken to get a good formula for prescribing, so as to insure solution; and it is advisable to administer warm, in tea or similar vehicle. Dose, 15 to 60 grains.

Thymacetin.—Occurs in white powder form; slightly soluble in water. A derivative of thymol; said to have analgesic and hypnotic effects. Dose, 4 to 15 grains.

Trional.—A derivative of sulphonal; occurs in lustrous scales, has a bitter taste, is readily soluble in alcohol and ether, but requires 320 parts of water for solution. Dose, 10 to 20 grains, up to sixty grains per day. Not much used, having no advantage over sulphonal.

Uralium, or Ural (syn., Chloral-urethane).—Occurs in crystals, readily soluble in alcohol and ether, but insoluble in cold water and decomposed in boiling water. Has been highly recommended as superior to chloral by some, by others just as eagerly denounced. Not much used. Dose, 15 to 45 grains.

Urethane (syn., Ethyl-urethane).—Occurs in colorless crystals, odorless, with a nitre-like taste; readily soluble in water, alcohol, chloroform, glycerin, etc. Has yielded good results, and is widely used; it is a chief ingredient in numerous proprietary specialties advertised in medical journals. Dose, 15 to 45 grains, in aqueous solutions; also used subcutaneously, in doses of 4 grains. —*Notes on New Remedies.*

Benzoyl-Pseudotropeine (Tropacocaine?).

This base occurs, associated with cocaine, cocamine, cinnamylcocaine, and other bases, in Java coca leaves, and to some extent in other coca leaves. It was first recognized by Giesel,[*] who separated the base in the form of a hydrobromide, but did not describe the method by which the separation was effected. The chief points of difference from cocaine were the melting-point of 49° C., and the comparatively lesser solubility of the hydrobromide and the nitrate. The hydrochloride also differed from that of dextro-cocaine, and the base was, moreover, optically inactive. Further investigation by Liebermann[†] showed that the composition of this base was not analogous to that of cocaine, and that when split up under the influence of hydrochloric acid it yielded, instead of ecgonine, a base isomeric with tropine from atropine, but, having a much higher melting-point than that, it was considered to be identical with the base obtained by the similar splitting up of hyoscine. The other product of the transformation being benzoic acid, the new coca base was named benzoyl-pseudotropeine, and Liebermann succeeded in reproducing it synthetically. At the meeting of the British Medical Association, at Nottingham, attention was directed to this base by Dr. A. P. Chadbourne, of Boston, U.S.A., who, in a paper read before the Section of Pharmacology and Therapeutics,[‡] described the results of an extended investigation carried out in the Pharmacological Institute of Berlin University with the assistance of Prof. Leibreich and Dr. Langgaard. He showed that in many respects the physiological action of this base differs from that of cocaine. It is a powerful local anæsthetic, but in the eye does not cause the ischæmia characteristic of cocaine, or the marked irritation and hyperæmia produced by the group of substances which Leibreich has termed anæsthetica dolorosa. It was found to be only half as poisonous as cocaine; local anæsthesia was produced more rapidly than by cocaine and apparently by less concentrated solutions. Dr. Chadbourne proposes to substitute for the name benzoyl-pseudotropeine that of "tropacocaine," as being more suited for medical use and suggestive of the chemical relations of this base to atropine and cocaine. That name, however, would be chemically inappropriate because the base is not an analogue of cocaine, but is really one of the class named by Ladenburg "tropeines."

In the last number of the ***Annalen***, Dr. O. Hesse has given a statement of the results obtained by him in the examination of benzoyl-pseudotropeine and the products of its decomposition. The base has the form of colorless plates of fatty lustre; it melts at 48° (Liebermann gives 49° C.), but in other respects the observations of Hesse agree with those of Liebermann. The composition of the base is represented by the formula $C_{15}H_{19}NO_2$.

The hydrochloride, $C_{15}H_{19}NO_2HCl$, is very soluble in water. When crystallized from alcohol it has the form of large rhombic crystals, and when precipitated from alcoholic solution by ether the form of extended laminæ. The salt melts at 269° C. (Liebermann gives 271° C.), and it is scarcely soluble in ether. Its water solution is optically inactive.

The platinum salt $(C_{15}H_{19}NO_2)_2,PtCl_6H_2$, obtained by precipitation, forms small pale-yellow needles sparingly soluble in water. Liebermann described the salt as amorphous.

On treating a solution of benzoyl-pseudotropeine in methylic alcohol with methyl iodide, colorless crystals soon separate, which consist of benzoyl-pseudotropeine methyl iodide, $C_{15}H_{19}NO_2,CH_3I$, which is tolerably soluble in hot methylic or ethylic alcohol. The corresponding chloride, $C_{15}H_{19}NO_2,CH_3Cl$, obtained by treatment with freshly precipitated silver chloride, crystallizes on evaporating the solution in stout prisms or needles. The platinum salt $(C_{15}H_{19}NO_2CH_3)_2,PtCl_6+2H_2O$, has the form of orange-colored needles, sparingly soluble in cold water. The gold salt, $(C_{15}H_{19}NO_2\text{-}CH_3)_2,AuCl_4$, has the form of a yellow crystalline precipitate, sparingly soluble in cold water. When a water solution of the iodide is shaken with freshly precipitated silver oxide, a strongly basic solution of the benzoyl-pseudotropeine hydroxide is obtained, and on evaporating this solution in the exsiccator an almost colorless residue is obtained, which is readily soluble in water.

Liebermann stated that by the splitting up of benzoyl-pseudotropeine with hydrochloric acid it was converted into benzoic acid and a base which he regarded as being identical with that obtained from hyoscine by Ladenburg. Hesse has, however, found that the base produced from hyoscine has a different composition from pseudotropeine, and it has been named by Hesse oscine.[*]

After separating the benzoic acid produced by the action of hydrochloric acid upon benzoyl-pseudotropeine, and evaporating the acid solution, a crystalline residue is obtained, from which the base formed by the splitting up of benzoyl-pseudotropeine can be obtained by adding caustic soda and shaking with chloroform. On evaporating the chloroform solution the pseudotropeine remains in the form of prisms, which gradually become moist on exposure and melt at 108°. In other respects it agreed with Liebermann's description, and, as the formula of benzoyl-pseudotropeine is $C_{15}H_{19}NO_2$, the base can only have the composition represented by the formula $C_8H_{15}NO$, as Liebermann found was the case.

The pseudotropeine hydrochloride crystallizes, on evaporating the water solution, in the form of long needles which rapidly deliquesce. On adding to the solution platinum chloride, the platinum salt soon crystallizes out as orange-red tabular crystals readily soluble in water. On evaporating the solution, the salt crystallizes in fine prisms. In both cases the crystals have a marked lustre, which they rapidly lose on warming from loss of water of crystallization. At 100° C. the salt becomes anhydrous, and then it melts at 206° C. Analysis gave results agreeing with Liebermann's formula—$(C_8H_{15}NO)_2,PtCl_6H_2+4H_2O$.

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[*] *Pharm. Zeitung*, July 4, 1891.

[†] *Berichte*, xxiv, 2336.

[‡] *British Medical Journal*, Aug. 20, 1892, p. 402.

[*] *Pharmaceutical Journal*, xxii, 222.

The gold salt has the form of yellow laminæ, and melts at 202°. Liebermann gave 225° C.

Pseudotropeine combines readily with methyl iodide, solidifying with evolution of heat. After recrystallization from water the compound has the form of colorless rhombohedral crystals generally grouped like those of ammonium chloride. It is anhydrous and melts at 270° C. The chloride has the form of stout rhombohedral crystals, which are anhydrous, readily soluble in water, sparingly in alcohol. The platinum salt is anhydrous, melts at 216° C., and crystallizes well from hot water. Pseudotropeinemethylhydroxide becomes brown on evaporating its water solution in the exsiccator.—*Pharmaceutical Journal and Transactions*, Sept. 24, 1892.

Recent Work in Botany.*

Karyokinesis.—One of the most interesting problems which the biologist has had to solve is the mode of growth of an organism. Of late years considerable progress has been made towards the solution of this problem. The fact has long been known that nuclear division is not one of simple fission, but a much more complicated process, called karyokinesis.

In the case of the lily the nucleus appears to be a tangled mass of chromatin fibrillæ, imbedded in a matrix of achromatin. Previous to division the fibrillæ become more evident and appear as a skein, and then form a star-like body—the astral stage. By division of these fibrillæ, a number of V-shaped segments are formed, and about this time the equatorial plate or striated spindle also forms and appears as a number of threads of protoplasm radiating from two poles and forming, as it were, two cones with a common base. The chromatic segments now arrange themselves on the threads at the common base, and, after a probable change along the threads, half become aggregated round each pole, and form an aggregation of V-shaped segments round the poles. The spindle at this time flattens out, the base consequently becoming wider, and microsomata appear and ultimately form a cellulose cell-wall between the new nuclei, in a plane parallel with the base of the cones. The chromatic segments go through the converse stages of astral body, tangled skein, and ordinary nucleus.

Now Guignard (*Comptes Rendus*, 9, iii, 91) has noticed that this is not the whole story of nuclear division. Attached to each nucleus are two small masses of protoplasm called archoplasmic bodies or directive spheres, which have a dense central portion, the centrosome, and a radiating structure of protoplasm.

Previous to nuclear division these spheres travel to two opposite positions of the nucleus and determine the plane of cleavage.

When the striated spindle is formed, the spheres form the poles, and from them the achromatic fibrils radiate which form the spindle.

After nuclear division, the centrosome divides into two, and the two spheres lie in a depression in each nucleus.

P. van Tieghem (*Journ. Bot.*, i, 1891) points out that each nucleus carries with it the causes of its own division, and proposes to call them tinoleucites, homologous with chlorophyll granules and other plastids.

In fertilization of the lily the spheres fuse in pairs, and then by position determine the plane of first cleavage of the ovum. Fertilization is thus not simple fusion of nuclei. Evidence of similar bodies in animal cells has been known for some time.

Internal Phloem.—The existence of phloem, other than the ring of tissue peripheral to the cambium ring, was pointed out by Hartig in Cucurbita, and the phloem thus noticed being on the internal side of the xylem, the whole arrangement of tissues was called, by De Bary, bicollateral bundle. It has since been shown by Scott to exist in many (eighteen) natural orders and in the root of Strychnos.

Gérard found that in Datura the normal phloem of the root gave off branches at the transitional region, some entering the pith and forming the medullary phloem, other branches being continuous with the external phloem. Weiss has shown that phloem exists as islands in the xylem of the root of Onagraceæ, etc. Scott and Brebner (*Ann. Bot.*, v.) have shown that in some cases we have a connection between the external and internal phloem by formation of secondary phloem elements by cambium. In the majority of cases, those plants with bicollateral vascular bundles show normal root structure, and medullary phloem is a continuation of the external phloem of the root. A certain number of plants, however, possess inter-xylary phloem, but intra-xylary phloem has only been found in Strychnos, Chironia, and Vinca (Herail, *Comptes Rendus*, cxii). The vascular tissues of Acantholimon present the curious arrangement of phloem, cambium, and xylem in regular succession, and this is due to formation at a late stage of cambium, either inside or just outside the protoxylem, and produces medullary wood and phloem with reverse orientation. The concentric bands of xylem and phloem are due to activity of successive cambium layers outside the normal cambium ring and with normal orientation.

Other writers have also shown that the occurrence of internal phloem is much more common than was supposed. Lamounette (*Ann. Nat. Bot.*, xi, 90) has shown that in all cases the phloem on the inner side of vascular bundles of Cucurbita, Solanaceæ, etc., arises from medullary procambium and not from the same procambium as bundles. They attain that position by subsequent evolution. The term bicollateral is thus unsuitable, as the bundles proper are collateral, and the other band of phloem has a different morphological origin.

Central Cylinder.—There are three well defined meristematic tissues at the apex of the stem, and little doubt exists as to the morphological value of the dermatogen and periblem. P. van Teighem (*Traité de Botan.*) and

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* Being the "Report on Botany," read at the meeting of the School of Pharmacy Students' Association on Feb. 9, 1893, by H. A. D. Jowett, and published in the *Pharmaceutical Journal and Transactions*.

Strasburger have partly removed the doubts concerning the third tissue.

The third primary region is called the central cylinder, and includes vascular bundles, pericycle, and pith. These cylinders are called steles. When we have a single cylinder it is termed monostelic, and when the cylinder branches, polystelic. In the fern each bundle is a stele, and corresponds not to the vascular bundle of a dicotyledon or monocotyledon, but to the whole arrangement of tissue interior to the periblem. In this case, of course, the pith is absent.

In the roots we have the stele similar to that of the stem, but the arrangement of xylem and phloem is alternate.

The connection between root and stem is now made clear. The radial bundles are not a distinct type from others, but steles in which the phloem and xylem have an alternate arrangement.

Similarly concentric bundles represent cases where the pith of the stele is absent, and the pericycle and phloem surround the xylem.

The three regions at the growing point are then: Dermatogen, giving rise to the epidermis; periblem, giving rise to the cortical tissue; and the central cylinder or stele, giving rise to pericycle, pith, and vascular bundles.

A False Kamala.*

Although few drugs are subject to such systematic admixture, accidental or intentional, as kamala, substitutions are comparatively rare. I was therefore attracted by the unusual appearance of five samples of kamala from Bombay (representing a bulk of about 7½ cwt.) that were exhibited on a broker's table a few days ago; the drug was coarser than genuine kamala usually is, not so mobile, and evidently of a heterogeneous nature, a dark brown powder adhering to the finger when passed through it. For a second sample of this drug I am indebted to Mr. Moss.

A cursory examination under the microscope showed, amongst much vegetable débris, a number of dark reddish-yellow particles; these, under a higher power, proved to be pollen grains; they are marked with numerous projections, and provided with three pores from which, under the influence of suitable reagents, the pollen tubes can be made to protrude.

The nature of the vegetable débris that accompanies these grains became more evident after warming for a few minutes in dilute (1-per-cent.) solution of caustic potash, and washing with water. Portions of narrow petals, a bifid style, and other fragments were isolated without difficulty, and enabled me to identify the bulk of the drug as consisting of a coarse powder of safflower florets (*Carthamus tinctorius*). To confirm this, safflower florets were dissected, the parts examined, and compared with fragments separated from the kamala in question.

The pollen grains are identical in shape, appearance, and size.

The corolla-limb of the safflower floret is sharply characterized by the secretion tubes which run parallel to the two fibrovascular bundles, and between them and the margins; they are usually more or less completely filled with a red-brown mass; the epidermal cells are mostly long and narrow, with sinuous longitudinal walls (not well seen after the action of caustic potash). These characters can all be recognized and identified in the so-called kamala.

In like manner the syngenesious anthers can be distinguished and identified by the presence of elongated pitted cells, with thickened walls, and by the tissue by which they mutually adhere. Lastly, the epidermal cells of the style develop towards the apex into short hairs; these are also observable.

In addition to the small starch grains derived from the corolla tube of the safflower, the drug contains larger angular grains, isolated or in compacted masses, which I have not been able to find in safflower; and also lignified tissues, apparently the pericarp of a small fruit. I have compared these latter with the pericarp of safflower fruits, kindly furnished me by Mr. Holmes and by Mr. Jackson, of Kew; they are not identical.

The presence in the drug of about 16 per cent. of ash, much of which is sand, points to careless collection; numerous acari and small beetles indicate careless preservation. Portions of the bodies of the former insects are especially frequent in the microscopic field.

From these data I conclude that this kamala is a carelessly collected and badly preserved safflower, mixed with much extraneous matter, and reduced to coarse powder.

The Wonders of Respiration.

I know a young man who has attended 25,920 funerals in twenty-four hours—all his own. He died by fractions, and was buried as fast as he died. The day after, he was just as much alive as he was two days before. As fast as he died, he found new life. He had learned that every motion of even the smallest part of the body caused the death of some atoms of that part, and that he had been eating and breathing all through his life just to replace those defunct atoms. Then he thought: "Chemistry says that those dying atoms are mainly carbon, hydrogen, sulphur, and nitrogen; and that the air is four-fifths nitrogen, and one-fifth oxygen, and also contains in the ratio of one part carbonic acid gas to every 3,333 parts of air. Now, if I could get that oxygen from the air to those atoms, it would unite with their hydrogen to form water, with their carbon to form carbonic acid gas, and with their sulphur to form a sulphuric acid compound. But then I might drown in the water, suffocate in the gas, or corrode in the acid. Indeed, to prevent such disastrous consequences, the vehicle that takes the oxygen to these atoms must bring away these poisonous products thus formed." When he had studied deeper into the subject he learned that this necessary vehicle was the blood. It can, eighteen times every minute, absorb through the lungs five and one-fifth teaspoonfuls of all the oxygen that the air can give it. It can unload even faster, because that can be done through the skin, kidneys, and bowels, as well as through the lungs. Outside, dead fish decays and breeds maggots and invisible poisonous microbes called ptomaines. Within, it is the same, except that the ptomaines usurp the whole field. The blood expels them also. So the funerals of the dead atoms consist in their cremation by

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[*] By Henry G. Greenish, F.L.S., Lecturer on Materia Medica to the Pharmaceutical Society of Great Britain, in *Pharmaceutical Journal and Transactions.*

the oxygen where they die, and the transportation and expulsion of their ashes and gases into the outer world, together with the microbes that they have generated, 25,920 times every twenty-four hours.

By this process the air of the room occupied becomes a cemetery in which are buried the ashes, gases, and microbes, together. The gas is the charcoal gas with which Frenchmen suicide, and the microbes are what make rebreathed air so deleterious. My friend's room was 12x12 feet, with ten-feet walls, and held just 86,175 breaths, of which 17,233 were of oxygen. But thirty-three pints of the whole air were carbonic acid gas, and in every exhalation he added to them four parts in 10,000 more of carbon gas, which rendered irrespirable 110 other breaths that he would need to inspire. So that if the room were air-tight, in forty-three minutes he would have no respirable air left, because of the excess of carbonic gas. Now, in addition, add the respired microbes, which in pure air are often less than one germ in two pints, but which increase to twenty in many supposedly well-ventilated rooms, and even to 600 in close school-rooms, and which are more than 100 times as poisonous as the carbon gas, and it is easy to see that the cemetery would need an airing within twelve minutes to drive out these pests. This is not all. In every inspiration he drew in twenty-five teaspoonfuls of oxygen; but the expiration returned only twenty teaspoonfuls. Hence, every minute the oxygen supply was reduced over ninety spoonfuls, with resulting inability to consume the dead atoms and food wastes in the system, leaving them to decompose and breed extra myriads of disease microbes. Thus, in 191 minutes the oxygen would be entirely gone, but it would cease to support life in fifty-seven minutes, and, with a twenty-candle four-feet gas jet burning, the fifty-seven would be reduced to nineteen minutes in an air-tight room.

My friend had learned that air moving one-half foot a second (just fast enough not to be felt as draft) gives thirty cubic inches per second. But 2,000 cubic feet per hour are required, which demands thirty-two square inches of inlet and as much outlet. How could he keep a steady supply of pure air in his room and avoid drafts? He thought of quite a number of plans, the two most feasible of which are these: First, he could have a suitable pipe lead from outside to the back of the stove, and sift through small apertures against the heated iron, then be deflected off toward the sides of the room. Again, he could fasten a strip of muslin eight inches wide across in front of the bottom of the lower sash, and raise the sash two inches. He could keep his room door open, and allow a good supply of air to come in through the hall window. Some other plan may occur to the reader.

By attention to these things our young friend lived to be so old that the accumulated ashes of his many funerals would have made an ample burial field for himself, if the microbes had been allowed to have their revenge. The noted camp-cure, which consists in outdoor life day and night, owes its efficacy to the fact that the crevices are sky-high on all sides, and the ample inflow of pure air has restored thousands to the health that they had lost by being shut in and rebreathing their own noxious exhalations.—S. H. Platt, M.D., in *American Agriculturist*, April, 1893.

"TOLYSAL."—"Tolysal" is easily soluble in alcohol and acetic ether, slightly in water, and almost insoluble in ether. Dr. Arthur Hennig, of Königsberg, has administered "tolysal" with excellent results in acute rheumatism of the joints.—*Chemist and Druggist*, March 18, 1893.

BROMOPYRIN, A NEW DERIVATIVE OF ANTIPYRIN.—Bromopyrin (mono-brom-antipyrin, $C_{11}H_{11}BrN_2O$) crystallizes from hot water in white, velvety needles; from hot alcohol as shining white needles. It is almost insoluble in cold, and difficulty soluble in hot, water; easily soluble in alcohol, chloroform, or ether. Its melting-point is 114° C. (say 237° F.). Of the therapeutic action of this new antipyrin derivative, nothing definite is as yet known.—*Merck's Bulletin*, March, 1893.

ANTISPASMINE is the name which has been given to a combination of one molecule of sodium narceinate with three molecules of sodium salicylate. It is a ~~white~~ hygroscopic powder which is very soluble in water. Professor Demme, of Berne, considers it far superior to opiates as a narcotic, for children especially, and he has used it for spasmodic cough, scarlatina, affections of the larynx, etc., in doses of ⅙ to 1½ grain, or 1½ to 3 grains in scarlet fever. Narceine is precipitated from the solutions of antispasmine by the addition of sodium carbonate, or even by the absorption of carbonic acid from the air.—*Chemist and Druggist*, March 18, 1893.

KRESIN, A NEW ANTISEPTIC.—"Kresin" is the name given to an antiseptic and disinfectant said to be a solution of cresylic acid in a solution of sodium, cresoxyl-acetate. It is described (*Pharm. Centralh.*) as a clear, brown fluid containing 25 per cent. of cresols; clearly miscible with water or alcohol in every proportion.

Kresin is said to be much less poisonous than carbolic acid and to exceed the latter in antiseptic and disinfectant power. In solution of the strength of one or more per cent., it is recommended for disinfecting surgical instruments, chambers, spittoons, etc.; ½- to 1-per-cent. solutions are employed in the treatment of wounds.—*Merck's Bulletin*, March, 1893.

THE PAPAW TREE.—This tree generally finds a place amongst other cultivated products in Zanzibar, the fruit, both green and when ripe, being much esteemed as an article of diet. The tree is easily and quickly raised from seed, attaining a thickness of one foot by the third year, and commencing to decay during the fourth or fifth year. The straight and undivided stem is herbaceous and soft, though it develops an external layer of fibrous tissue; as might be expected from the rapidity with which it grows, the trunk is hollow, though it has more or less dense, imperfect septa. "The newer parts of the stem are green, but as they age become grayish; towards the top it also bears the scars formed by the falling-off of leaves, which are arranged in a kind of umbellate canopy." It grows to about twenty feet in height. —*British Consular Report*, 266, 1892.

ZANZIBAR ARROWROOT.—A variety of arrowroot is to be found in most native gardens in Zanzibar, and named "uwanga," but I do not think it is the true arrowroot (*Maranta arundinacea*), the shape of the leaves differing, though the preparation of the roots appears to be the same; "uwanga" bearing a fleshy, knotty root, which is ground and washed in repeated waters, and finally sun-dried. This preparation, mixed with sugar, forms a favorite sweetmeat with the Arabs. I see no reason why arrowroot should not be more extensively cultivated on the island, and form an article of export. The cultivation is easy, and immediate returns are obtained. "The plants are propagated by parting the roots. A light loamy soil is the most favorable for their growth. When they are a year old the roots are in a fit state for use."—*British Consular Report*, 266, 1892.

TO CLEAN A STOVEPIPE OF SOOT.—An inquirer in *Meyer Bros.' Druggist* having written to know how to remove soot from the stovepipe without taking down the pipe and imperiling the combination, his query is answered as follows by three independent observers:

I see that a reader desires to know how to clean a stovepipe from soot. Take about two pounds of strip zinc. When you have a large bed of coals put in your zinc and open the draught in the chimney.—Dr. J. F. Durant, Quincy, Illinois.

To clean stovepipe from soot, put some kindling in stove and place on top some old scraps of zinc. This will effectually clean pipe.—T. A. Vinke, St. Charles.

In answer to Foseweau & Leveer, of Bowie, Texas, will say that if they will burn a piece of sheet zinc about the size of one page of the *Druggist* every three or four days in their stove they will not be bothered with soot in the pipe.—L. Hoddon Bridges, New Haven, Missouri.

PREPARATION AND EMPLOYMENT OF THYROID JUICE.—Thyroid juice has of late received much attention as a remedy in myxœdema. The methed of preparation which I would recommend is as follows (*British Medical Journal*): Three lobes of the thyroid are removed from newly killed sheep at the abattoirs, and placed in a bottle containing a ½-per-cent. solution of carbolic acid. At home the capsules are carefully and completely stripped, the glands thinly sliced on a sterilized slab, and placed with 45 minims (3 grammes) of ½-per-cent. carbolic solution in a conical 2-drachm (8 c.c.) measure, this being covered over with a piece of sterilized blotting paper. Next morning the mass is squeezed through a piece of well boiled cambric, the resulting sixty minims or so of turbid fluid being then reckoned as four doses. The hands and instruments used are always sterilized by heat or by the use of 1-in-20 carbolic solution. The syringe used for injection is always washed out with the same solution, both before and after use.—Prof. A. Barron, of Liverpool.

PRESERVE THE CHILDREN'S TEETH!—Of great importance is the proper care of the deciduous teeth. Their neglect is the cause of intense dental pain endured by children, and of consequent loss of sleep, drain upon their vitality, and finally the loss of the aching organ. From the last arises a disordered digestion and all its train of unfortunate symptoms, caused by not having organs to properly masticate the food. The presence of healthy deciduous teeth in the jaws till the development of the permanent set, is necessary for the proper evolution of the jaws and teeth. Even dead roots with or without crowns should not be extracted prematurely, as it causes absorption of the alveolus and retarding and irregularity in the growth of the permanent teeth. Therefore the deciduous ones should be treated and preserved.

It becomes the duty of the physician to instruct the parents in the importance of this subject, and insist upon proper hygiene of the children's teeth. All particles of food should be removed after each meal, and the teeth frequently cleansed with a soft brush and tepid water—Dr. Gordon in *Dental Review*, December, 1892.

THE ALKALOIDS OF COD-LIVER OIL.—At the Academy of Sciences last week M. Berthelot epitomized a communication from Dr. J. Bouillot on the alkaloids of cod-liver oil, their origin, and their therapeutic effects. After having dwelt on the diuretic action of these alkaloids, the author endeavored to describe their exact origin and to show how they may be practically employed. He finds that the organic derivatives to which cod-liver oil owes its undeniable therapeutic qualities are all of biliary origin. As the result of numerous experiments made by him, Dr. Bouillot is persuaded there would be danger in endeavoring to use these alkaloids separately; consequently he has adopted their total bulk as a medicamental and experimental unity, which he designates by the name of "pangadnine." This substance appears crystalline under the microscope. It is soluble in alcohol of 80°, and gives 3.5 per cent. of fluid residue. Its action as a general excitant of nutrition will tend to assist the organic resistance in all maladies due to weakness of constitution—gout, rheumatism, diabetes, etc. A commission has been named to examine Dr. Bouillot's communication.—*Chemist and Druggist*, March 18, 1893.

ANALYSIS OF COAL-TAR COLORS.—A. G. Green proposes a scheme for the qualitative analysis of these colors, which is to some extent based on that of Weingärtner. A solution of tannin is employed to distinguish acid from basic coloring matters, and the division of those "soluble" from others "insoluble" in water is also adopted. The zinc-dust reaction is utilized to differentiate the derivatives of triphenylmethane from the group including the azines, oxazines, thiazines, and acridine colors. The former, after reduction, are only reoxidized by air with great difficulty, whilst the colors of the second group all reappear with great rapidity on exposure of the reduced solutions to the atmosphere. The triphenylmethane colors again are distinguished from those which do not yield leuco compounds, but are completely broken up on reduction by the color of the reduced solution being restored by chromic acid. Quinoline and primuline colors are distinguished by the great difficulty attending their reduction. The analytical scheme based upon these reactions is represented in a set of tables, and precautions to be observed in performing the various reactions are appended to the paper.—*Journ. Soc. Chem. Ind.*, xii, 3.

CERBERIN, A NEW CARDIAC.—Cerberin($C_{25}H_{38}O_{12}$) is a glucoside obtained from a Mexican cerbera, probably *Thevetia Yccotli*, DC. (Joyote), family Apocyneæ, genus Plumeria. It is a yellowish-white, crystalline, bitter powder, which is easily soluble in hot water and diluted alcohol. Upon boiling it with dilute sulphuric acid it separates into cerbera resin and glucose. The author (Inaug. Diss., Dorpat, 1892) investigated cerberin pharmacologically and found that it possesses the same action as the members of the digitalis group. Injected subcutaneously, unlike digitoxin and thevitin (the heart-poison of *Cerbera Thevetia*), it very seldom provokes abscesses; instilled into the eye, it produces no inflammation. The action of cerberin on the heart is rather closely similar to that of the digitalis group, particularly when administered hypodermatically. Cerberin has not yet been employed therapeutically, and consequently dose statements are still wanting.—Dr. Zotos (*Merck's Bulletin*, March, 1893).

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[*Note.*—This should not be confounded with *Cerebrin*, the new remedy derived from brain substance.—ED.]

A CHEAP APPARATUS FOR MAGNESIUM LIGHT.—Since the introduction of powdered magnesium metal, the difficulties formerly experienced in the preparation of photographs by artificial light have been enormously reduced. The magnesium-light apparatus generally used in photographic studios is a complicated and expensive one, and, although certain cheap and simple contrivances, such as the Hastings magnesium flash-light lamp, have done much to popularize the use of magnesium light, it may not be out of place to describe an apparatus which can be prepared by any amateur photographer without trouble or expense. As in many other cheap substitutes, we again have recourse to our old friend the clay pipe. Round the bowl of the pipe the wick of a spirit-lamp is rolled. Soak this wick in methylated spirit and set fire to it; you will then obtain a circular flame round the bowl of the pipe. You have previously introduced a little powdered magnesium into the bowl of the clay, and now, if you blow through the india-rubber mouthpiece attached to the pipe by means of a sufficiently long tube of india-rubber, you will project the particles through the bowl, at the top of which they will take fire at the circular flame and produce a brilliant pyramid of flame. Care should be taken to hold the pipe-bowl as far as possible away from the face, as magnesium burns are painful and severe.—*Chemist and Druggist*, March 18, 1893.

PALATABLE CASTOR OIL.—The usual objections urged against the use of castor oil are summarized by N. J. Pritzker, as follows: (1) The patient's aversion to the taste of the oil, which is not much modified by the usual method of emulsification; (2) the nausea inevitably induced by the undue bulk of the dose in that form; (3) its incompatibility with many substances desirable as adjuvants. Fortunately, however, all these objections can be removed, by simply employing the yolk of an egg as an emulsifier in place of acacia. The addition of oil of bitter almonds, excellent for disguising the odor, a little sugar and some milk (where dilution is practicable), makes it an epicurean potion rather than the "horrible" medicine in its original state. The emulsion can be made to contain 85 per cent. of oil, the same being considered at least 25 per cent. stronger in action than the plain drug. The dose, therefore, is diminished rather than increased in bulk.

The formula found by actual experiments to be most acceptable is:

Castor oil	fl ℥ iij.
Yolk of egg	fl ʒ iv.
Oil bitter almonds	gtt. ij.
Milk enough to make	fl ℥ iv.

The dose of this is the same as that of pure castor oil, and is taken diluted with milk, sweetened water, or wine. The oil should be added slowly to the yolk of egg, triturating thoroughly; then the other ingredients are added.—*Merck's Bulletin*, March, 1893.

WANTED: A HYPODERMATIC APERIENT.—One of the blank spots in therapeutics is due to the absence from materia medica of any substance which will, when administered hypodermatically, cause purgation as effectually and painlessly as apomorphine causes the evacuation of the contents of the stomach. In the last stages of Bright's disease, and in other complaints which are accompanied by œdema, there is generally obstinate constipation, the precursor of uræmia. Patients are often unconscious; and to relieve the distress, croton oil in 1- or 2-minim doses is dropped on the back of the throat. The effect is generally disappointing. Some time ago two Berlin physicians tried aloin dissolved in formamide, cathartic acid in water, colocynthin in glycerin and spirit, and citrullin in the same. The subcutaneous injections simply created intense local irritation and constitutional disturbance, but no purgation; and *per rectum* the solutions only emptied the lower bowel. Something that will affect the whole intestine is wanted. Who will be the happy discoverer of the medicine?—*Chemist and Druggist*, March 18, 1893.

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[There are certain physiological reasons which inhibit the production of a hypodermatic aperient. But a medicament that very nearly or quite supplies this need is the Citrullin suppository, prepared by Messrs. Parke, Davis & Co. It is prompt in action, its influence being made manifest throughout the entire intestinal tract.—Ed.]

THE ALKALOIDS OF ACONITUM NAPELLUS.—In conclusion, then, apart from results of general scientific interest, the investigations of the alkaloids of *A. Napellus* which have been conducted in the Research Laboratory during the last two years have led to the following results of immediate practical importance to medicine and pharmacy:

1. The complete definition of the properties and proximate constitution of pure crystalline aconitine, which in future should be exclusively used medicinally for "aconitine," as a substance of definite and invariable composition, capable of producing constant therapeutic effects.
2. The demonstration of the existence in the roots of *Aconitum Napellus*, besides aconitine, of three and possibly of four amorphous alkaloids which constitute, as a rule, at least 75 per cent. of the total alkaloids.
3. The demonstration of the fact that commercial amorphous "aconitine" chiefly consists of these amorphous alkaloids.
4. The separation of two of these alkaloids (aconine and isaconitine) in a pure state, and a description of their composition and chief chemical properties.
5. The demonstration of the fact that one of them, present in the roots, as a rule, to as large an extent as aconitine, possesses the same chemical composition as aconitine, and furnishes on hydrolysis the same decomposition products.
6. A comparison of the chemical properties of these two alkaloids, aconitine and isaconitine, has shown that whilst they present certain similarities, as in the formation of somewhat similar crystalline salts, there is a marked difference in their chemical constitution, although they are both isomeric *benzoyl-aconines* and are represented by the same empirical formula.
7. It has been established that whilst aconitine is a most powerful poison in very minute doses, neither its isomeride isaconitine, nor its hydrolytic product aconine, is toxic in the same dose.—Wyndham R. Dunstan, M.A., in *Pharmaceutical Journal and Transactions*, March 18, 1893.

HYDROXANTHALINE.—While xanthaline shows great resistance to oxidizing agents, it is readily attacked by nascent hydrogen. If to the hot solution of the sulphate containing an excess of acid, granulated zinc be added, a violent reaction sets in, following which the yellow color of the liquid is found to have disappeared. On cooling, the liquid almost solidifies into a mass of white crystals, which are a double compound containing zinc and the sulphate of another new base, hydroxanthaline.

To separate the latter, the solution is evaporated to dryness and treated with strong boiling alcohol, which takes up very little zinc but dissolves the sulphate of hydroxanthaline readily. The clear alcoholic solution is evaporated, the resulting crystalline magma pressed and recrystallized. It is very soluble in water, and the base is precipitated from its solution as a resinous-looking body, which quickly solidifies. Recrystallized from weak spirit, it forms hard, white crystals. These melt at 137° C., and are anhydrous.

The following analyses point to the formula $C_{37}H_{38}N_2O_9$ for the new base.

(1) .3528 gramme gave .8734 CO_2 and .1868 H_2O.
(2) .3180 gramme gave .7828 CO_2 and .1712 H_2O.
(3) .2402 gramme gave .5933 CO_2 and .1280 H_2O.
(4) .289 gramme gave 11.2 c.c. N (Bar.=753 mm., t.=15° C.) or .013 gramme N.

HYDROXANTHALINE.

	Calculated for		*Found*			
	$C_{37}H_{38}N_2O_9$	$C_{36}H_{38}N_2O_9$	1	2	3	4
C....	67.89	67.29	67.52	67.14	67.36	....
H ...	5.81	5.92	5.90	5.98	5.92	....
N....	4.28	4.36	....	....	....	4.50

A simultaneous combustion of salicylic acid under the same conditions, furnished the following values:

	Calculated for $C_7H_6O_3$	*Found*
C	60.87	60.72
H	4.35	4.38

There can be no doubt as to the correctness of the formula with the higher carbon for hydroxanthaline. It is nearly insoluble in water, but dissolves very freely in alcohol, benzene, and similar solvents. It forms colorless salts which are very soluble but crystallize well. The least trace of this alkaloid at once forms, with strong sulphuric acid, a deep violet solution, which becomes colorless on dilution with water, but is reproduced by adding more acid. This color test is extremely delicate, and resembles that for cryptopine, with this difference, that with the latter alkaloid a trace of nitric acid is necessary to develop the color, while with hydroxanthaline pure sulphuric acid produces it at once.—T. and H. Smith and Co., in *Pharmaceutical Journal and Transactions*, March 25, 1893.

XANTHALINE: A NEW OPIUM ALKALOID ($C_{37}H_{36}N_2O_9$.*—This new alkaloid was discovered in our laboratory as far back as 1881, but, owing to various reasons, publication has been deferred until now. It occurs in the acid mother-liquids resulting from the crude hydrochlorates of morphine and codeine in the Robertson Gregory process, and is precipitated therefrom, along with narcotine, papaverine, and many impurities, on diluting and carefully neutralizing those liquids.

That precipitate is purified by washing with dilute caustic soda and hot water, and subsequent treatment with weak spirit. The remaining crystals are dissolved in boiling water, with addition of as much hydrochloric acid as is requisite to dissolve three-fourths of them, the remaining fourth being then added, and the whole allowed to boil for some time. After filtration, the insoluble residue is well washed with hot water and again treated with boiling spirit. A considerable portion still remains undissolved, and this is now dissolved in dilute hydrochloric acid and filtered hot. If the liquid be at all concentrated, the filtrate will solidify into a spongy mass of crystals, which, after being freed from the dark liquor, present a similar appearance to narceine, but of bright yellow color. Recrystallization from dilute hydrochloric acid and washing with strong spirit renders the salt of the new alkaloid pure.

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*The elementary analyses cited in this paper were kindly carried out by Prof. Hermann Ost, of Hanover, then at Leipsig.

The alkaloid itself is readily precipitated from the hydrochlorate by boiling with water, and is left behind as a white powder on heating the hydrochlorate above 100° C. for several hours. From a hot alcoholic solution of the salt, it is thrown down by an alkali as a white crystalline powder, insoluble in water and in alkalies, sparingly soluble in boiling spirit, more easily in benzene, and very easily in chloroform. Its melting-point is 206° C. It is a weak base, but forms well defined salts with mineral acids if these are used in excess, all these salts possessing a more or less intense yellow color. The nitrate is of a bright orange color. In accordance with this very characteristic property of forming yellow salts, the name xanthaline (ξανθός=yellow; 'άλς=salt) was chosen for this new alkaloid.

The following analyses were made, pointing to the formula $C_{37}H_{36}N_2O_9$:

(1) .322 gramme gave .8025 gramme CO_2 and .1655 gramme H_2O.
(2) .218 gramme gave .5395 gramme CO_2 and .1120 gramme H_2O.
(3) .214 gramme gave .5328 gramme CO_2 and .110 gramme H_2O.
(4) .3705 gramme gave .9215 gramme CO_2 and .1815 gramme H_2O.
(5) .467 gramme gave 16.7 c.c. N (Bar.=758.5 mm., t.=8°) or .0201235 gramme N.
(6) .6135 gramme gave 22.8 c.c. N (Bar.=745 mm., t.=12.5°) or .026408 gramme N.

The substance used for Nos. 1, 2, and 5 was identical; for 3 and 6 recrystallized, all dried over vitriol. The substance used for No. 4 was previously heated to 150° C.

XANTHALINE.

	Calculated for		*Found*					
	$C_{37}H_{36}N_2O_9$	$C_{36}H_{36}N_2O_9$	1	2	3	4	5	6
C.....	68.10	67.50	67.97	67.50	67.90	67.83	..	..
H.....	5.52	5.62	5.71	5 71	5.71	5.44	..	..
N	4.29	4.38	..	..	..	..	4.31	4.31
O.....	22.09	22.50						
	100.00	100.00						

Hydrochlorate of Xanthaline.—As mentioned above, xanthaline dissolves freely in dilute warm hydrochloric acid, and separates from the bright yellow solution on cooling, in voluminous yellow needles which, after withdrawing the liquid, should be washed with a little cold strong spirit and dried at a very gentle heat. This salt is perfectly stable, but loses weight over vitriol. If heated for some hours to about 150° C., the pure base, free from chlorine, is left. In order to prove the correctness of the formula deduced from the analyses of the base, the hydrochlorate was likewise analyzed.

(1) .254 gramme burned with chromate of lead and metallic copper gave .519 gramme CO_2 and .1355 gramme H_2O.
(2) .548 gramme gave .2015 gramme AgCl or .0498 Cl.
(3) .468 gramme lost on being heated to 160° C., until the weight remained constant, .086 gramme ($HCl+H_2O$).

Calculated for

	$C_{37}H_{36}N_2O_9.2HCl+4H_2O$	$C_{36}H_{36}N_2O_9.2HCl+4H_2O$
C....	55.71	55.03
H....	5.77	5.86
Cl....	8.91	9.04
H_2O+HCl....	18.20	18.47

Found

	1	2	3
C....	55.73	....	....
H....	5.93	....	....
Cl....	....	9.1	....
H_2O+HCl....	....	....	18.37

Reactions.—Xanthaline dissolves in strong sulphuric acid, with a deep orange color like thebaine. It is not decomposed, however, unless heat be applied, and on standing, or more quickly on addition of water, the dark orange gives way to a pale yellow, and the sulphate of xanthaline crystallizes out in soft yellow needles. This reaction is very striking.

Nitric acid also dissolves xanthaline in the cold without decomposition, and solutions containing a large excess of dilute nitric acid can even be heated to the boiling-point without decomposition. The nitrate crystallizes out on cooling in beautiful, shining, orange-yellow needles.—T. and H. Smith and Co., in *Pharmaceutical Journal and Transactions*, March 25, 1893.

SEA-WEEDS.—The first fact to which I desire to direct your attention is that every good species of sea-weed must be regarded as distinct, not merely in form and structure, but in its vital processes and the chemical products it elaborates.

This individuality is the more remarkable because sea-weeds live under less varied conditions than ordinary plants. Although some of the larger algæ, such as the oarweeds (Laminariæ) and honey ware* (alaria), etc., appear to be furnished with roots, yet it is well known that these are mere holdfasts and do not obtain nourishment for the plant. It therefore has to absorb nourishment through its entire external surface from the medium in which it grows. Although sea-water varies, so far as we know, only in its temperature and its degree of salinity, yet different species growing in the same locality not only exhibit peculiarities of growth and structure, but also yield different products. Among these we may mention the following:

Fucus vesiculosus.—For the sake of comparison it may be pointed out that there are six common and two rare species of Fuci (excluding varieties) occurring in Britain, that are usually referred to this genus.† These are *F. canaliculatus*, *F. ceranoides*, *F. platycarpus*, *F. vesiculosus*, *F. nodosus*, and *F. serratus*. The two rare species are *F. anceps* (Ireland), and *F. distichus* (Scotland). Only two of these possess air-bladders, viz., *F. vesiculosus* and *F. nodosus*. In the former the frond has a midrib, and the bladders are situated usually on each side of it In the latter the frond is compressed but thicker, and has the air-vesicles immersed in its substance; the receptacles or organs of fructification are borne on short lateral peduncles. These species occupy different situations on the shore. *F. ceranoides* is found in the brackish water of estuaries and marine lochs. *F. canaliculatus* grows on

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*The word ware is probably identical with "wrack," the name applied to fuci. The equivalent French word, vareck or varec, vraic in Jersey, or wrack in England and Scotland, has a double meaning, it being applied to goods or merchandise (as in the English words hardware, tinware, warehouse), and also to goods thrown up by the sea on shore; and in this sense the words vareck and wrack are evidently applied to sea-weeds. We see also the connection with the words wreckers and wreck, and with wrack as used in the well known quotation, "Left not a wrack behind." The term hen-ware seems to be a modification of honey, *i. e.*, sweet ware.

† *F. canaliculatus* is now usually referred to a distinct genus, Pelvetia, in which there are only two oospores in the onium. *F. nodosus* is in like manner placed in the genus Ascophyllum, characterized by having four oospores in the organism. In Fucus there are eight.

rocks near high-water mark, and is exposed to the air during a considerable part of the day; it is a small plant, with channeled fronds. *F. platycarpus* occurs near high-tide level, and the others follow in succession towards low-water mark in the order in which they are mentioned. In some places, as at Smallmouth, near Weymouth, these plants can be seen forming distinct zones of growth. The species vary much in size and in width of the frond, according to the conditions under which they live. Thus *Fucus vesiculosus* has a very broad frond when growing in still water in bays, and a narrow one when hanging over a rock and exposed to the pouring of the waves over it, the pressure thus exerted probably tending to elongate the cells, just as happens with batrachian Ranunculi in rapidly flowing fresh water.

The lifting power of a large plant of the bladdery species is very considerable. Some years ago a naturalist was much puzzled by observing tracks in the sand, which began and ended without any visible cause. On watching for some hours he observed that stones of considerable size were floated by the fuci growing on them, and on being carried shorewards left the indentations in the sand.

Possibly these bladders serve some purpose in enabling the plant to retain the position that suits it best.

Some idea of the vast quantities of fuci that grow on our shores may be gathered from Mr. Stanford's statement that he has seen as much as 10,000 tons cut in a single loch during the summer for making kelp. One hundred tons of wet sea-weed yield 5 tons of kelp or 2½ tons of soluble salts. One loch would therefore yield in one summer no less than 250 tons of salts.

The work that is effected by sea-weeds in abstracting mineral matter from sea-water, is thus seen to be enormous.

It might be supposed that the mineral constituents of marine algæ are due solely to the amount of sea-water contained in their cells, but this is not the case, since the character and amount of the salts present vary in different species.

It has also been suggested that the greater or less degree of immersion in water during the ebb and flow of the tide, due to the position in which the plant grows, affects the amount of certain salts present. Thus in the true Fuci the amount of iodine present is less in those exposed to the air for the longest period, as seen in the following table, given by E. C. C. Stanford:

	Iodine per ton in lbs.	
Fucus vesiculosus....	.665	bladder wrack.
Fucus nodosus	1.282	knobbed wrack.
Fucus serratus.......	1.887	black wrack.

But a comparison with other algæ growing in sea-water and exposed only at extreme low tides will show that this is not the rule:

	Lbs. of iodine per ton.
Himanthalia lorea..................	1.998
Chonda Filum......................	2.688
Halidrys siliguosa..................	4.773
Chordaria flagelliformis............	6.298

It may be noted also that the official species of Fucus is not the richest in iodine.—E. M. Holmes, F.L.S., Curator of the Museum of the Pharmaceutical Society of Great Britain, in *Pharmaceutical Journal and Transactions.*

DR. ADOLPH G. VOGELER, for the past three or four years editor of the *Western Druggist* (Chicago), has, we understand, severed his connection with that journal.

THE W. T. THACKERY COMPANY, manufacturers of granular and effervescent salts, No. 151 Monroe street, Chicago, assigned March 14th, to George W. Todd, for $11,888. Assets are placed at $16,426.

DOCTOR OF MEDICAL SCIENCES is a new medical degree proposed for establishment in France by the French Minister of Public Instruction. The *Journal of the American Medical Association* says: "This title will be superior to the ordinary M.D."

TENNESSEE PHARMACY BOARD.—The Tennessee Pharmaceutical Association, through its Executive Committee, has submitted a list of ten names to the Governor, from among whom that official will choose five to constitute the Pharmacy Board provided for under the recently enacted law.

MORRISSON, PLUMMER & CO.'s establishment, Chicago, was damaged a short time ago, to the extent of about $5,000, by fire which started on the third floor of their place of business. The damage was mostly caused by water, a large quantity of which had to be used before the seat of the blaze was reached.

FLORIDA PHARMACY.—The Florida State Pharmaceutical Association will hold its annual meeting in Jacksonville, commencing on Wednesday, May 10th, when matters of importance to every druggist in Florida will come up for discussion.

The State Board of Pharmacy has changed its place of meeting to Jacksonville, and will convene there on the 9th of May.

MONTANA will soon have a pharmacy law if present indications are not deceptive. Unless the central and eastern portions of the country are careful, the entire West will be protected by pharmacy laws before Indiana and Connecticut fall in line. The former practice of incompetent druggists going west to escape pharmacy laws will then be reversed, and they will retrace their steps to the "Hoosier" State and the far East.—*Meyer Bros.' Druggist.*

TACT IN SALESMANSHIP.—Tact is important in the sale of goods. There is seldom a woman—and women are the purchasers—who enters a store who has a definite idea as to what she wants. She has got to be suited, and many times it requires tact to please. The articles must be shown in such a way that the lady will believe that her taste is suited. There should be no misrepresentation in doing this. Misrepresentation is not tact. Have you this faculty? or do your customers leave you many times without buying, simply because you have not been able to made them believe that the goods shown were what they desired? It is born with some, but if you are not born with it you can acquire it to at least a certain degree—to a degree that will be well worth while to strive for.—*American Druggist.*

TENNESSEE has joined the family of States having laws regulating the practice of pharmacy. The Legislature of that State recently passed a bill to this effect, the text of which has not yet come to hand, but the main features of which, we understand, resemble those of the Kentucky law. The act does not go into force until November 1, 1893, and it applies only to towns and cities having 3,200 inhabitants and over. The latter proviso, it will be remembered, formed a part of the statutes for the regulation of the practice of pharmacy in nearly every State when the same were first passed, but was soon dropped from most of them as tending to complicate matters, and being really of no service to the public at large. This will probably be the case so far as Tennessee is concerned, within a year or two.—*National Druggist*, April 1, 1893.

PHARMACY AND THE PARIS PRESS.—The Paris daily press seems to find the subject of pharmacy an evergreen one, and *Le Matin* has recently entered the ring with a leading article headed "A Lifting of Pestles." The question of early closing forms the subject-matter, and the writer states that though two hundred pharmacists have given their names to the 9-o'clock-closing movement, the great majority are hostile to alteration as "incompatible with the exigencies of the profession." M. Planchon, Director of the Paris School of Pharmacy, in the course of an interview on the subject, declined to commit himself. "You will understand," he said, "that I cannot take part with the students who are now following their studies, or with the pharmacists established in business who may have acquired their professional knowledge under my supervision. All I am at liberty to say is that the propaganda of the assistants seems to me to be premature. Just as we are in the midst of efforts to raise French pharmacy from the unmerited discredit that has surrounded it for many years, it seems scarcely advisable, in my opinion, to expose it to renewed criticism." The article deals with other pharmaceutical questions, such as substitution and the limitation of pharmacists.—*Chemist and Druggist*, March 18, 1893.

LETHARGIC PHARMACY IN HOLLAND.—The average Continental pharmacist still clings dearly to his professional dignity. In his eyes the maintenance of the dignity entails the public manifestation of abhorrence for anything so vulgar as the advertising of pharmaceutical preparations; hence, whenever an apotheker breaks through the icy ring of etiquette and starts boldly upon a career of publicity, his colleagues gather their robes of righteousness closer around themselves and point the finger of obloquy at the offender. There is a progressive chemist in Holland just now who has commenced to put up liquid extract of cinchona (De Vrij) in bottles of a peculiar shape, and advertises his preparation as "the genuine" one. Dr. de Vrij himself states that when the pharmacist gave him notice of his intention to bring out this specialty he disapproved of it, but it is not denied that Mr. Nanning, of The Hague (the chemist in question), has as good a right to put up the extract as anyone else. For advertising it he is, however, publicly held up to contempt in the *Dutch Journal of Pharmacy* by two other pharmacists, who propound the extraordinary doctrine that "the advertising *on a large scale* of any remedy—in other words, the recommending of medicaments otherwise than by a physician—is quackery."—*Chemist and Druggist*, March 11, 1893.

FOR INFORMATION AND ENTERTAINMENT.—At a meeting of the Joint Committee of the Chicago Medical Profession on World's Fair Entertainment, held at the Sherman House, November, 1892, the establishment of a Bureau of Information and Service was delegated with approval and endorsement to Chas. Truax, Greene & Co., the committee reserving to itself the duty of such social entertainment of visiting physicians during the continuance of the Exposition as may seem desirable. This action was confirmed at the final meeting of the Joint Committee, Feb. 25, 1893; and on application of the Practitioner's Club and the South Side Medical Club, the matter of social entertainment was delegated to them, with full authority to act in the capacity of entertaining bodies, with the retention of the chairman and its American and foreign secretaries already appointed.

The American secretaries are: Dr. Archibald Church, Dr. Geo. Henry Cleveland, Dr. John C. Cook, Dr. J. C. Culbertson; British secretary, Dr. Sanger Brown; German, Dr. F. C. Hotz; French, Dr. Fernand Henrotin; Spanish, Dr. E. J. Gardiner; Italian, Dr. A. Lagario; Swedish, Dr. K. Sandberg; Canadian, Dr. R. D. McArthur; Russian, not yet chosen. The scope and duties of the above secretaries will be designated in the future. C. WARRINGTON EARLE, *Chairman.*

PAUCITY OF PHARMACISTS IN RUSSIA.—In most countries, we fancy, the profession of pharmacy is regarded (at any rate by those within) as a painfully overcrowded one. But in Russia, so the official pharmaceutical paper of that country complains, there are far too few chemists. At present, according to statistics which have just been published, the Empire comprises 6,478 persons who have received a pharmaceutical education (*i.e.*, proprietors of shops, assistants, military and naval pharmacists, etc.) in a population of 116,000,000. There is, consequently, one pharmacist to every 17,907 of population; whereas Germany, where the conditions of pharmacy most closely approach those of Russia, numbers an apotheker to every 5,714 inhabitants. In respect of the number of pharmacies the disparity between the two countries is still greater, for whereas Russia has one chemist's shop to every 35,000 inhabitants, Germany (where the number is also artificially limited) possesses one to every 9,695 inhabitants. But in spite of their large aggregate of possible customers the Russian pharmacists are not a very prosperous class, for the people spend very little on medicine. In the Baltic provinces the average yearly outlay for this purpose is only 22 kopecks (4*d.*) per head, in Siberia it is 5 kopecks (1*d.*), and in Central Asia 2 kopecks, or less than a halfpenny. —*Chemist and Druggist*, March 18, 1893.

GEORGIA PHARMACISTS.—The following announcement by the secretary of the Georgia Pharmaceutical Association will be read with interest not only by the pharmacists of Georgia, but by all who expect to visit Chicago the coming summer:

⁂

The Georgia Pharmaceutical Association will meet in Rome, on Aug. 10th next. After a two days' session they will adjourn to Chicago. The committee appointed at the session in Columbus last year to arrange for transportation and hotel accommodations at Chicago, would be glad to hear, at the earliest possible date, from every member of the Association who expects to make the trip to Chicago, and whether he will be attended by any of his family. This information is of importance, as the charges for transportation and entertainment will depend in some degree upon the number in the party. All communications on this subject should be addressed to Mr. D. W. Curry, Rome, Ga., who is chairman of Transportation Committee.

The local druggists will be glad to meet every member of the Association, with their wives or other members of their families, at the session in Rome. It will be their pleasure to make this, the first meeting of the Association in North Georgia, at least as entertaining and successful as any of its predecessors. We will see to it that those who do not go to Chicago shall at least remember pleasantly their visit to Rome.

WM. BRADFORD, *Local Secretary*.

THE KANSAS LEGISLATURE AND THE SCHOOL OF PHARMACY.—The Kansas School of Pharmacy has, since its establishment, been housed in the Chemistry building of the State University, and has always been insufficiently provided with room. When the last Legislature met, it was hoped by the friends of the school that the request for a new building would be granted. Evidence was submitted showing the inadequate facilities for good work, and requests for a new building were made by the Board of Regents, the faculty of the school, and by the druggists of the State. The result was a bill introduced into the House appropriating $20,000 for an addition to the building in which the school is now located. The bill passed the House with but little trouble, and high hopes were entertained of a brighter future for the school. When the bill reached the Senate, however, a spell of economy seized the Legislature, and the measure was promptly defeated.

Thus, from a mistaken sense of economy on the part of our law-makers, an excellent institution has been seriously crippled in its work. The trifling sum of money asked would never be missed by the people of Kansas, while the result of their bounty would be felt at once in the elevated standing of the pharmaceutical profession. The money granted to such an institution is not a gift, as so many seem to think, but a loan that would be amply repaid, and with interest. It is to be hoped that this fact will be realized by the next Legislature, and an atonement for past neglects be made by providing for the wants of such institutions as the School of Pharmacy.

THE PROPOSED BOTANIC GARDEN.—The New York Botanic Garden Association held a meeting on Feb. 27th, in the rooms of the American Geographical Society. Among those present were Cornelius Vanderbilt, Seth Low, ex-Chief Justice Charles P. Daly, Robert Mackay, J. Pierpont Morgan, Judge Addison Brown, Prof. Nathaniel L. Britton, Samuel Sloan, John S. Kennedy, and Charles Butler.

The report of the Finance Committee showed that the $250,000, which is required by the act of the Legislature to be raised by subscription before the 250 acres in Bronx Park can be secured and the $500,000 to be appropriated by the city can be obtained, was practically in hand. The committee has circulated a subscription paper to obtain ten subscriptions of $25,000 each, of which seven have already been pledged. It is expected that no difficulty will be encountered in securing the three remaining subscribers. When this list is full it is intended to circulate subscription lists in sums of $10,000 and $5,000, and finally to solicit miscellaneous subscriptions from the general public. The committee believes that this plan will speedily result in the collection of a fund of $500,000. Already many prominent citizens have signified their willingness to put their names down for $10,000, and a still larger number stand ready to subscribe $5,000 each.

Maps of Bronx Park were exhibited by Prof. Britton, and the general opinion of the meeting was strongly in favor of selecting land on both sides of the Bronx, so that that picturesque stream might flow through the middle.

Bronx Park contains 750 acres of beautiful woodland, in which there will be no difficulty in selecting 250 acres which possess natural advantages far surpassing those of the famed botanic gardens of London, Paris, and Berlin.

THE PROOF OF DEATH.—The minds of some persons are haunted by a persistent fear lest their bodies should be buried alive—a fear which is happily almost entirely destitute of any rational excuse. The aspect of death is in every way so different from that of life that it needs no skilled inspection to distinguish it. This is the rule, and one broken but very rarely by an exception. Occasionally, however, some difficulty has arisen even as regards this primary distinction. A case recently reported may be mentioned as an illustration. A new-born infant of poor vitality, whose mother died in her confinement, had after a short time apparently died also, and was actually coffined when a cry revealed the fact that it still breathed. Later on the same day the vital flicker again appeared to be extinguished, but this time the care of the medical attendant prevented the occurrence of any mistake as to its existence. It has been suggested that in order to guard against the possibility of any such disastrous oversight in future, no certificate of death shall be given except after personal inspection of the deceased by a medical man. We do not know any objection to this proposal. On the contrary, it has much to recommend it. The ordinary signs of death do not require any full explanation on our part. It is worth while, however, to note that such a case as that referred to above is exactly of the kind in which especial care should be exercised as regards this matter. It is where extreme feebleness results in a state of torpor continuing perhaps for days with faint signs of life, where breath and heart-beat show but an occasional indication, where muscular power is nearly absent, as in old paralytics, and *rigor mortis* hardly to be depended on, that we seek with some anxiety for absolute proof of death. This is to be looked for in such cases not so much in any isolated sign as in the association of several to the exclusion of all vital manifestations. Among the most reliable indications that life is extinct we would mention rigidity, cadaveric discolorations in relation to position and surface pressure, and as an early and almost certain sign the glairy eyeball, with its pupillary aperture fixed in dilation.—*Lancet.*

A MICROBE-KILLER'S WOES.—William Radam, of "Microbe-killer" fame, has just come a bad cropper in the American law courts. About four years ago there appeared in the *Druggists' Circular* an article by Dr. Robert G. Eccles, giving what purported to be an analysis of the "Microbe-killer," and alleging that famous substance to consist substantially of the following ingredients:

Impure sulphuric acid	4 drachms.
Muriatic acid (impure)	1 drachm.
Red wine ... about	1 ounce.
Impure hydrochloric water	1 gallon.

The cost of this compound, it was pointed out, was not more that 5c. per gallon (exclusive of the jar), and Mr. Radam's sale-price $3. Mr. Radam subsequently wrote a letter to a St. Paul journal, in which he called Dr. Eccles a quack and a charlatan, and the latter thereupon took proceedings for libel against the microbe-killer. Dr. Eccles was formerly Dean and Professor of Chemistry in the Brooklyn College of Pharmacy, and one of the editors of the United States Pharmacopœia, and brought many eminent physicians and others to speak to his character. Mr. Radam, who employed the renowned Colonel Robert G. Ingersoll as his counsel, contended that he had called Dr. Eccles a quack in his capacity of a chemist, and not in that of a physician, and that his analysis of the microbe-killer was proof of his want of chemical knowledge. In cross-examination, says the *Oil, Paint, and Drug Reporter*, Mr. Radam admitted that he did not know the meaning of many of the names of diseases mentioned in his work on "Microbes and the Microbe-killer," that a part of the book was written by others and was utterly unintelligible to him, and that he knew comparatively nothing of botany, and nothing whatever of natural history or of medicine. He declared that he did not care to know anything about these subjects. It was also shown that he had testified in a former case that "a microbe is simply impure air. Pure air is oxygen, impure air is nitrogen." A verdict was given for Dr. Eccles, with $6,000 damages, and costs against the defendant. Another suit—in which Mr. Radam claims $200,000 damages, against the *Druggists' Circular*, for the insertion of Dr. Eccles' report—is expected to be heard shortly.—*Chemist and Druggist*, March 25, 1893.

WHERE THE PH.G.'S COME FROM.—It is interesting to note the number of colleges of pharmacy in the United States, and the part they play in recruiting the ranks of the profession. There are nearly two score of such colleges in this country; this number including all schools in which pharmacy, as a profession, is taught, whether they be attached to some college or university, or stand independent. No better idea of the work which these institutions are doing, from year to year, can be gained than that conveyed by the perusal of the following list, the number of graduates at last year's commencement and at this year's commencement being represented by the two columns of figures, respectively. The latter, in many instances, is only an estimate, it being of course impossible to know how many in a class will be graduated until after the final examinations:

	1892.	1893.
Albany	18	19
Atlanta	0	4
Brooklyn	15	30
Buffalo	21	..
California	33	33
Chicago	27	..
Cleveland	20	15
Detroit	8	8
Howard (Washington, D.C.)	8	9
Illinois	50	40
Iowa	6	4
Kansas City (Mo.)	17	20
Kansas	10	16
Louisville	17	15
Louisville, Woman's	2	..
Maryland	39	45
Massachusetts	26	31
Michigan (Ann Arbor)	30	..
National (Washington, D.C.)	12	20
New York	103	..
Ohio (Columbus)	6	7
Ohio Normal (Ada)	47	60
Oregon	3	2
Philadelphia	202	210
Pittsburg	12	20
Perdue (Lafayette, Ind.)	21	21
St. Louis	47	45
Scio (Ohio)	9	9
Tulane (New Orleans)	13	..
Vanderbilt (Nashville, Tenn.)	5	..
Wisconsin	14	..

Of the two leading Canadian colleges the Ontario graduated seventy-six students last year, and expects to have a larger graduating class this year by ten or a dozen, while the one at Montreal issues a diploma to each student who completes the two years' course, there being at present sixty-five pupils attending its winter session. The Louisville college has two sessions each year, and will graduate a number of students in July in addition to those graduated at its regular commencement in February.

The State of Ohio has six pharmacy schools within her borders, three of which are patronized directly by the State.

Only one college is devoted exclusively to the education of women, but many of the other colleges receive a large share of patronage from the ladies.

MEETING OF THE CONNECTICUT PHARMACEUTICAL ASSOCIATION.—The seventeenth annual meeting of the Connecticut Pharmaceutical Association was held at New Haven, Feb. 7th and 8th, in the parlors of the Tontine Hotel, about seventy-five members being present.

Officers for the ensuing year were elected as follows: President, Willis L. Mix; First Vice-President, James Duggan, of Norwich; Second Vice-President, Thomas R. Shannon, of Hartford; Treasurer, Lester H. Goodwin, of Hartford; Secretary, Frederick Wilcox, of Waterbury.

The report of the treasurer showed $1,440 in the treasury. Willis F. Mix, of the Executive Committee, reported a membership of 308. The Legislative Committee made no report, owing to the deadlock in the Legislature for the last two years.

The Association then adjourned to the hotel dining-room, where an excellent supper was partaken of, about ninety members participating.

At 9 o'clock the following day they again met for business, which consisted of the reading of original papers, discussion of the same, and discussions on business matters, especially the relations of cutters and dry-goods houses to patent-medicine proprietors, but without providing a satisfactory solution of the question.

Of the papers read, one was upon "Pill Excipient," by N. A. Upham, of Waterbury; another, on "Albumin Test for Urine," by George McGuire, of Waterbury.

In the room adjoining that in which the meeting was held, there was an attractive exhibit of druggists' supplies.

The Association voted to instruct its Legislative Committee to urge a slight change in the Pharmacy act. The proposed amendment provides for the establishment of a laboratory at the capitol where candidates for druggist's licenses may have a practical test of their qualifications.

A resolution was introduced which provided that the dues should be omitted for the year, as there was a surplus of $1,200 in the treasury. The resolution was overwhelmingly defeated.

The Association nominated the following gentlemen for State Commissioners of Pharmacy: N. D. Severin, of Norwich; H. M. Bishop, of New Haven; T. P. Shannon and J. B. Ebbs, of Waterbury. Of this number the Governor selects one man whom he appoints.

The next annual meeting will be held at Hartford.

The following "Poetic Pill," by William Edward Penney, administered at the banquet, deserves to be quoted in full; so here it is:

Shade of wise Esculapius,
Son of Apollo, we
Your presence here would see.
From those pale realms where you
Have dwelt since angry Ju-
piter—fearing your skill—
With thunderbolt did kill
You dead, so it is said,—
Come back to us to-night,
And we will treat you right.

Although we may not be
Your children, yet are we
Like unto your left bower
In the game of the hour;
We sometimes take a trick
From Death, by playing slick,
Therefore we claim a right
Your presence to invite.
Don't ask what you shall wear,
Come on just as you are.

* * * * * * * *

What would the old chap say
If he were here to-day,
And saw the smile of Brother Lowe
His genial countenance o'erflow,
Or Mayor Sargent, dignified,
Cause men with mirth to hold their sides,
Or listened to a Rathbun's speech,
As juicy as a mellow peach?
But, more than all, what would he say,
When once he learned what wisdom lay
Behind the smiles, the jokes, and all
The pleasantries that here may fall?

Ah, could he see the patience, skill,
And long, long hours of toil that fill
The measure of these earnest lives,
Whose each successive triumph drives
Grim Death from his entrenched domain,
And gives the dying hope again!
Could he but know how brain and hand
As sleepless sentinels must stand
To guard from ignorance and crime
Humanity in every clime;
The delving into nature's store
Of hidden things, undreamed of yore,
The unrelaxing search to find
Still greater blessings for mankind;
How in the constant fight of man
Against his foes, they lead the van,
Alert and hopeful, tireless, true—
I say, if the old fellow knew
And saw all this, he'd only be
Too glad to join your company,
And wish he'd known a little bit
Of what you know, when he was hit
By Jupiter, for then he might
Have been your chairman here last night;
But candor leads me here to say,
Beside your chairman of to-day
He would not, for good sense and wit,
Be in it just a little bit.
Fast speed the hours when pleasure drives!
May this oasis in the lives
Of earnest, thoughtful, brainy men
Be reached by all of you again
Upon life's somewhat arid plain,
Bringing fresh pleasures in its train;
And when each life has filtered through
The sands of time, may all of you,
When measured in that graduate
That waiteth in another state,
Be found to have been purified
By the hard trials that betide
Your high profession here below,
And go where all good druggists go.

Trade Supplement.

The BULLETIN *invites its advertisers and subscribers, and all connected with the drug trade, to send items of information, for these columns, concerning all new departures, products, and facts regarding the general and special trade interests of druggists.*

G. H. CAMERON is embarking in the drug business at Atlanta, Mich.

⁂

PARKE, DAVIS & Co. have added the following to their list of preparations: Gelatin-coated pills of Nitrate of Silver, ¼ grain; Jarvis's improved Chalybeate Comp. pill; Diurnal Tablet Triturate Cases (filled); Fluid Cascara Aromatic—intended to make the administration of cascara sagrada as agreeable as it is known to be efficient.

⁂

FOR elegant printing, lithographing, and embossing, druggists should consult Gillam's Sons Company, Philadelphia, Pa. An amateur job of printing is, as a general thing, a well understood advertisement of mediocrity on the part of the business house which hires it done, as well as of the printers who perform it. It would be difficult to suggest an improvement on the chaste and novel samples of work sent out by this company. Do not forget them when you need printing of that kind.

⁂

DURING the month of April the drug store formerly presided over by James E. Warder, of West Fifty-ninth street, New York City, passed into the hands of a very genial young gentleman, who has been for several years identified with Mr. Kinsman's pharmacy on Fourth avenue. Mr. Comerford has infused new life into the business, and merits not only our best wishes but also the success which should attend pharmaceutical ability. The store is fitted throughout in antique oak, with an exquisite marble soda-fountain and a tile flooring of elegant design. It is situated opposite Roosevelt Hospital, and but a few doors from the "Department of Medicine" of Columbia College.

⁂

A POINT worth noting in the claims of soda-water manufacturers who at this season of the year come smiling to the front, is with reference to the lining of the gas-fountain cylinders, so apt to become corroded by the action of the acid used in generating the genteel beverage. Messrs. Chapman & Co., of Madison, Ind., who have been in the business for twenty-six years, offer a soda-fountain in which the acid comes in contact with nothing but glass, which of course it cannot corrode, and hence the customer who invests a nickel in the product of such a fountain need have no fear of lining his stomach with tin, lead, or other indigestible mineral substances. Another point made by Messrs. Chapman & Co. is that their goods are cheap in price, and purchasers are thereby enabled to make the most of the beverage itself, and the trade which it will attract, instead of being hampered by the calculation of interest on money invested in a showy outfit. Write them for catalogue.

ONE of those timely opportunities which occasionally turn up to arrest the progress of conspiracy, is advertised on page 11 of this issue. While one hundred barrels of whiskey is not a large quantity compared to the resources of the Whiskey Trust, it will answer admirably, so far as it goes, to supply the wants of a considerable number who might otherwise feel called upon to pay into the hands of that remorseless corporation the sum of $2.64 a gallon for what is now offered by Humiston, Keeling & Co. at $1.65. All of our readers who are in need of a good article of Kentucky sour mash, for strictly medicinal and legitimate purposes of course, are referred to the offer made by Messrs. H., K. & Co., which, it goes without saying, will accomplish its object and sell the entire special stock within a short time. Do not get left.

⁂

WITH greatly increased facilities and quadrupled capacity, the O. & W. Thum Co., Grand Rapids, Mich., have again effected a reduction in the cost of manufacturing "Tanglefoot," and as usual they make a corresponding reduction in the price—25c. per case. Besides reducing the price, they are packing two holders in each box. Each holder is made up into a package with five double sheets. These packages will prove a convenience to the dealer, and will also encourage the purchase of larger parcels by his customers, who will appreciate the greater economy and the free holder. The new machinery of this firm turns out even a more perfectly finished article than heretofore; the new holder is a model of neatness and simplicity, and, in connection with the reduction in the price, ought to make a year of unprecedented success for "Tanglefoot."

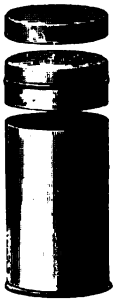
⁂

ONE of the most flourishing business towns along the Hudson River is Newburgh, and an important factor in making it such is the old and successful drug house of Theodore Merritt. Mr. Merritt has been actively engaged in the drug business in Newburgh for over thirty years, and is probably more earnestly interested in it today than at any time in the history of his business. He now has the very valuable assistance of his four sons, who in their separate capacities add great strength and force to the business. Mr. Merritt is a liberal buyer, believing it necessary to have the goods in stock if he expects to make sales. His constantly increasing business in both the wholesale and retail departments demanded greater accommodations, and led him recently to build an extensive addition to his store. There can be but one result in the future of this house, viz., constant growth and greater successes, as all connected with it are energetic, thorough, and reliable business men.

⁂

HE STUCK TO IT, and here are the results from a very small beginning: Mr. A. Major, of 232 William street, New York, is the founder of Major's Cement business and the president of the A. Major Cement Co. This company was organized the first of October, 1892, with a capital of $100,000. A. Major came to the States twenty-six years ago from Canada. In 1876 he commenced to manufacture Major's cement in a tomato can, and now the article is a familiar household word and is used all over this country and in many European countries. Stated in a word, it mends everything. This company is also the owner of two other preparations having large sale, viz., the Leather and the Rubber Cement, each of which is unequaled for its special use. It is the desire of Mr. Major to have the remainder of shares not sold taken by druggists, because they are already interested in the profits of the goods, and by pushing the sales of the cement they can increase the value of their stock. Those who would like to subscribe for some shares will be forwarded a prospectus on application.

⁂



WE take pleasure in calling attention to the new style insect-powder cans which Joseph G. Taite's Sons, Philadelphia, Pa., are manufacturing, and which we illustrate by the accompanying wood-cut. They are giving complete satisfaction to the trade, and are spoken of in the highest terms by those who use them. They are made with entirely new-style sifting tops which have extra gold-lacquered lids. The essential feature of these tops is, that they fit inside the bodies of the cans, instead of outside; thus avoiding the enlarged and unsightly appearance which two lids on a can would otherwise give. The gold-lacquered lids not only add to their beauty, but avoid the objectionable wheel, which too often is so hard to turn that the finger nails are broken in the attempt. They are tall and shapely, easy to fill, and made to hold the following quantities of Persian powder, viz.: 2 oz., 3 oz., 4 oz., and 8 oz. Druggists who are putting up insect powder will find them a very attractive and convenient package.

⁂

ILLINOIS.

The Southern Illinois Medical Society meets at Belleville, May 10th and 11th.

Will Laugerman, head clerk at "Dick" Dodd's, Springfield, has been down with rheumatism.

Dr. G. A. Hulett served hot soda in Springfield the past winter as an experiment. It was a success. Dr. Sell, his clerk, is a crack soda-man.

Dr. Riddle, of Springfield, is now part owner of the C. M. Bird store, of Mechanicsburg. The Doctor will devote his time mainly to the practice of medicine.

Frank Milnor, of Litchfield, is one of the live drug men of Southern Illinois. He catches a new idea as quick as the best of them. His store always has an air of business.

"How are you, Dr. Hickman?" "Miserable, thank you." The Doctor is one of the veteran drug men of Springfield, and, though his head is gray, his heart is young, and his smile always has welcome in it.

⁂

MINNESOTA.

D. D. Turner, Ph.C., who for some years past has had charge of the prescription department of W. H. Stevens & Co.'s pharmacy at Faribault, has purchased the entire stock, fixtures, and good-will of the prominent dispensary of E. C. Jackson & Co., Northfield. Mr. Turner's large experience and ability will stand him well in hand in his new venture, and, in view of these and his prominent corner and complete stock, his financial prospects are bright. Gold leaf will cover the letters D. D. Turner & Co. on the board over the door.

⁂

MISSOURI.

Kansas City:

The State Board of Pharmacy met in the parlor of the Midland Hotel, this city, Monday, the 3d inst., and examined sixty applicants. The members of the Board this year consist of August T. Fleishman, of Sedalia, President; A. R. Edmonds, of Maine, Vice-President; F. W. Sennewald, of St. Louis, Secretary.

O'Rielley Bros., 920 Maine street, have now in their employ Fred Winckleman, a graduate of pharmacy and one of the best posted prescription clerks in the city.

F. L. Compton has bought out B. W. Adam's Pendleton Pharmacy in Pendleton Heights. This location is considered by everyone as good as that of any neighborhood store in the city. We wish Mr. Compton success in his new place.

Adolph Llama, head pharmacist at H. C. Arnold's store, Fifth and Maine streets, met with a painful accident a few days ago by slipping on the ice and spraining his ankle, which laid him up for several days, but we are glad to see he is able to be around again.

S. W. Bullock has bought out Nickells & McKay, at Independence avenue and Walnut street, and the ever genial Frank Swartz will be in charge of the prescription department.

Ball & King have opened the pharmacy at Seventeenth and Madison streets, formerly owned by M. S. Porter but closed recently to satisfy several mortgages. This is a splendid location for a drug store, and we predict a good business for the new proprietors.

Geo. T. Lynn, of the Meyer Bros. Drug Co., has returned to the city after spending several weeks in Old Mexico and Texas.

C. S. Van Hook, who recently sold has store on Independence avenue, is now clerking for R. J. Holmes, Eleventh and Walnut streets.

J. A. Wood last month bought out O. S. Ellvin, Fifth street and Virginia avenue, Kansas City, Ks. Mr. Wood was formerly engaged in business in this city at Twelfth and Locust streets. H. D. Diers still remains in charge of the prescription department.

⁂

NORTH CAROLINA.

B. W. Hunter, the popular and clever young clerk of the late James McKimmon, of Raleigh, is running the business for Mrs. McKimmon.

W. M. Yearby, of Durham, is making some repairs on his store. When completed, the store will be one of the handsomest in the State. He does a very large retail business.

John G. Hall, of Oxford, does a very large prescription business, and carries the very best preparations that can be purchased. He is one of the many successful pharmacists of the State.

On account of the burning of the Zinzindorf Hotel at Winston, the next meeting place of the North Carolina Pharmaceutical Association has been changed to Greensboro. The date of the meeting is August 9th and 10th.

Augustus Bradly, the efficient young clerk of Melville Dorsey, of Henderson, is chairman of the Committee on Papers and Queries of the North Carolina Pharmaceutical Association, and has issued his report, which is nicely gotten up.

On the 28th of March, the Governor of the State commissioned W. H. Wearn, of Charlotte, a member of the Board of Pharmacy for a term of five years. The Association at its last meeting made a wise selection in choosing Mr. Wearn to this position.

The Drug Clerks' Association, which was formed at Greensboro on March 2d, elected the following officers: President, F. A. Bobbitt, of Winston; Vice-President, B. W. Hargrave, of Wilson; Secretary and Treasurer, E. W. O'Hanlon, of Winston. The next annual meeting will be held at Morehead City, August 23d.

⁂

NORTH DAKOTA.

Grand Forks:

If Minneapolis, St. Paul, Milwaukee, or even Chicago, think that because Grand Forks is 'way up north in Dakota, in the land of wheat and beef, she has no nice prescription-stores, they are simply fooled, and ignorant of what has been going on in the establishment of this class of business houses in the Northwest in the last few years, while they have been trotting at their old gait. This paragraph is in honor of one of these. Trepanier & Company have moved into their new building; and when we say that their new arrangements in floor, store-front, show-cases, and fixtures are fine, it is too mild an expression. Just imagine the new steel ceiling, copper window and door facing fronts, plate-glass from floor to top of the room, and the new walnut arch just going in over the prescription case, and—well, if you are in this neighborhood, or expect to be, you should go and see Trepanier & Company's new pharmacy.

"The Dacotah" drug store is greatly improved by the extension of the prescription department back into the former writing-room of the hotel. This gives its proprietor, Robert Bergh, much more room to display his large stock, and he possesses the knack of doing it.

O. Granrud does not propose to let the every-day or any other druggist get ahead of him in the way of a neat, clean pharmacy. Those new solid-oak fixtures of his, together with the plate-glass cases, cost big round dollars, but he's got them. His improvements speak pretty well for his management at this stand for just one year.

With this issue we with sorrow mention the death of Oscar Kreutz, who for the past few weeks has been in the employ of Robert Bergh, of this city. Mr. Kreutz had been sick but a few days, his trouble being pneumonia, which first started from an old attack of influenza and winter cholera. He had been in the employ of the Weinhold Drug Co. of Minneapolis, in their West Hotel drug store, and, leaving his family in that city, had come north to assist Mr. Bergh, who was an old friend, having attended the same college at Christiania, Norway. Mr. Bergh endeavored to bring the wife and children of the sick man to his side before his death, but was unable to do so. The remains were taken to Minneapolis by Mrs. Kreutz, who arrived at Grand Forks the day after her husband's death.

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PROHIBITION IN THE INDIAN TERRITORY.

Editor BULLETIN OF PHARMACY:

That prohibition in Kansas does not prohibit, is quite generally known; but in the Indian country it is quite a different thing. There Uncle Sam does not allow U. S. licenses, neither does he allow liquor to be given away. He has a good many marshals to see that the noble red man neither buys from the pale-faces nor "introduces" (imports) fire-water himself. This law was made for the Indians' own good, before they united in marriage with the whites and before the whites settled among them. Times have changed. To-day it requires an expert to distinguish the majority of the Indians (of the five civilized tribes) from the whites. The Cherokees, Creeks, Chickasaws, Choctaws, and Osages are attempting to form a Territory and become citizens of the United States. It will be remembered that, while their country is called a Territory, it is not one at all. The tribes have their own chiefs or executive, and they owe no allegiance to the United States. It is only a question of time when they will accomplish their desires, and it is hoped that they will be given every encouragement. The simon-pure Indians, as far as these tribes are concerned, have become a matter of history.

During a recent commercial trip—which was the first, by the way—the writer met but very few full-bloods. The rest were educated, were well dressed, and but few showed any conspicuous signs of Indian origin. They have lost their identity, and there is no good excuse for their not becoming citizens if they want to.

To get back to prohibition: Dealing in liquors is a criminal offense, and topers are severely punished for "introducing" them. The act of selling makes but little difference, except in the sentence. As there are no saloons, the druggists are looked to to supply the demand, but they can't even have any on hand "for medicinal use." Even alcohol, to be used in manufacturing, has to be smuggled in as tincture of so-and-so.

As whiskey and beer can positively not be obtained, and the toper must drink something, it might be of interest for the reader to know what is used as a substitute. Hostetter's Bitters, Prickly Ash Bitters No. 1, and Harter's Wild Cherry Bitters are excluded by law.

Through the kindness of J. O. Cobb, of Muscogee, the following list of actual substitutes for ordinary alcoholic drinks is presented: Tinctures capsicum, ginger, cinchona, and opium camphorated; spirits of nitre; elixir of calisaya; flavoring extracts of lemon, vanilla, and peppermint; Chamberlin's Diarrhœa Remedy, Prickly Ash Bitters Nos. 2 and 3, Worcestershire Sauce, Harter's Iron Tonic, Electric Bitters, Bull's Sarsaparilla, Peruna, and Vinegar Bitters.

Beef, wine and iron is too sweet. They want something with a twang to it. The above certainly have a twang.

A good story is told on Judge Schakelford, of the

United States Court, Muscogee. It is said that he imported a half-gallon bottle of bay rum, something fine, for personal use. He filled a toilet bottle and used it, and when he attempted to refill the smaller bottle the larger one was empty. Since then the druggists have had to add ant. et pot. tart. to their bay rum.

E. F. M.

⁂

SOUTH CAROLINA.

Dr. H. Baer, of Charleston, who is one of the most successful wholesale druggists of the State, was married on April 4th to Miss S. W. Pemberton, of that city. May their voyage through life be one of complete happiness!

The Murray Drug Co. are doing the largest business in the history of the firm—as large, indeed, for their capital, as any firm in the State. And why shouldn't they when they have such men as Dr. Murray as manager, Dr. Wood who presides over the manufacturing department, Mr. Cain stock and shipping clerk, Mr. Riddle at the retail department, and Mr. Levin the efficient book-keeper?

⁂

SOUTH DAKOTA.

H. P. Pettigrew, formerly a St. Paul, Minn., druggist, and who for some months past has been in charge of the manufacturing department of L. T. Dunning & Co., wholesale and retail druggists, of Sioux Falls, contemplates a trip to Germany in June next, where he will complete his studies in pharmacy and chemistry.

A wildcat in a drug store is about as much of a novelty as a "bull in a china shop," but this can be seen any day at J. H. Onstad & Co.'s pharmacy at Sioux Falls. And he's a big wild woolly one too, from the banks of the muddy Missouri River. He's in a good strong cage, though, and as an advertisement is a success.

W. H. Nelson, of Sioux Falls, who had nearly closed out his stock of drugs at his old stand on Phillips avenue, has overhauled the old and put in an entirely new stock of pharmaceutical preparations, toilet and fancy articles, and in the future will accommodate his old friends and customers and, we hope, many new ones. Frank Hann, of Canton, will be in charge of Mr. Nelson's branch store at No. 136 North Phillips avenue, and Will H. Clark will hold forth as usual at the old stand, 123 Phillips avenue south.

⁂

TEXAS.

J. D. Nance, Gainesville, has succeeded to the drug business of M. E. Gooding.

J. B. Boyd, late of New Birmingham, Tex., has moved his stock and fixtures to Hearne.

Mensing & McCullough, of Galveston, have succeeded Thompson & Ohmstead in the jobbing business.

Messrs. Hunt & Adams, of Fort Worth, have formed a copartnership and opened up a drug store at Blum, Texas.

Brown & Morris succeed Jones & Co. at Coleman. They have just bought a new building, and will soon move into it. This firm is about the strongest in Western Texas, and bids fair to do a large business.

Oscar Janasche, late in charge of laboratory of the Behren Drug Co., has opened up the Geyser Drug Store in East Waco, under the efficient management of Mr. Rohrer, late of the Williamson Drug Co.

L. M. Whitsitt has sold his entire interest in Whitsitt's Pharmacy, Fort Worth, to C. W. Connery. Mr. Whitsitt has proprietary preparations which have absorbed much of his attention recently, and this deal was made that he might give them more capital and all his time.

Bowie will soon have its fourth drug store. The name of the new firm will be Rives & Vaughan. We presume there are but few who have not seen or heard of the bowie-knife. The man who designed and made the first knife of that particular kind was a Texan. The town bears its name in his honor.

San Antonio:

N. C. Young has succeeded Orynski & Young, and will now conduct his business as a physicians' supply-house.

Ed. McCullough, late secretary of the San Antonio Drug Co., has withdrawn from the said company and moved to Galveston, where his name is to be found in the firm succeeding Thompson & Ohmstead.

This city has been overrun with with Northern invalids this season. New hotels to accommodate the increased patronage are badly needed. A good opening for some capitalist.

Fort Worth:

C. W. Connery, late of Parke & Connery, Jefferson, Tex., has purchased the L. M. Whitsitt Pharmacy, corner of Seventh and Lamar streets, and will remodel the same, and hereafter conduct the business in the best style, catering to the leading physicians of the city with only the finest chemicals and pharmaceuticals.

J. C. Preston & Co. have succeeded Dr. Stallcup in business at Jefferson. Mr. Preston, known by all as "Uncle Joe," was salesman for Meyer Bros. Drug Co. eighteen years in this territory, and surely his thousands of friends will wish him success.

⁂

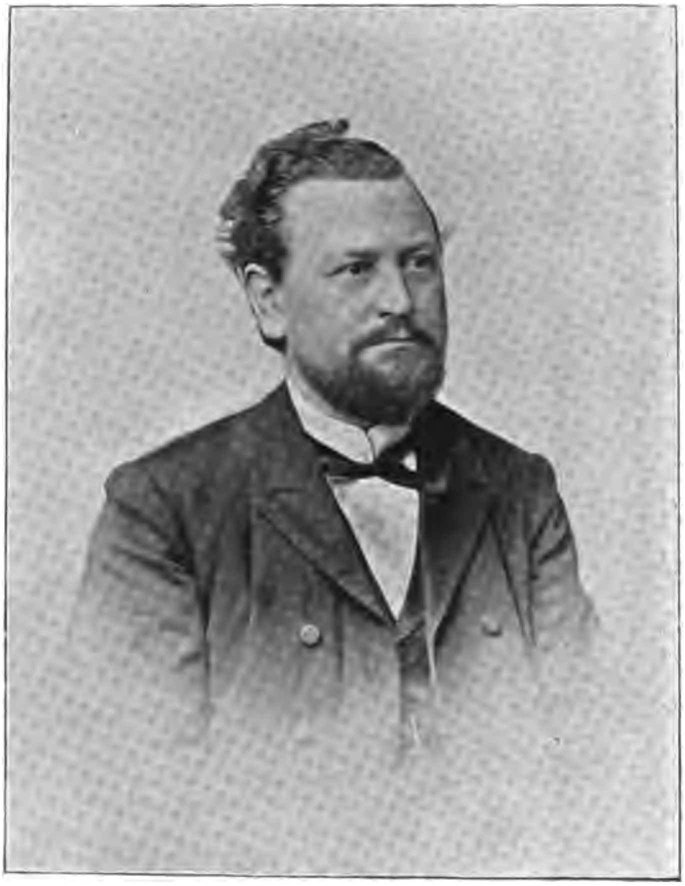
VIRGINIA.

Robert Brydon, of Danville, lost his entire stock of drugs on March 7th, by the falling in of the walls of his store, caused by the burning of the hotel next door. We hope he will soon be established in business again.

J. B. Hall's Sons, of Fredericksburg, are one of the oldest firms in the State, having started in the eighteenth century—1791. They do a very large retail business.

E. S. Leadbeater & Sons, of Alexandria, are also among the old-timers, having organized in 1792. This firm does a very large wholesale business, especially with the retail trade of Washington, D. C.

The Christian-Barber Drug Co., of Roanoke, have recently formed as a stock company, with J. F. Christian as manager. He is a thorough business man, and success awaits them.



Ernst Schmidt

1893.

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INDEX OF CONTENTS.

Editorial.

PAGE
Ernst Schmidt 193
A Plea for More Desirable and More Definite Methods of Determining Distinctive Tests for Non-toxic and Poisonous Alkaloids and Toxic Ptomaines 194
Duties of Employers to Employees 194
The Bicycle from a Medical Standpoint 195
Tariff Rulings 197
Anti-Trust Legislation 197
Austrian Apothecaries to Visit the World's Fair 197

Original Articles.

PRACTICAL PHARMACY.

The Silver-Work of Dispensing Apparatus. By Thomas Warwick... 198

CHEMISTRY.

On the Toxic Constituents of Jatropha Curcas and Croton Tiglium. By Professor R. Kobert 200

BOTANY AND MATERIA MEDICA.

Notes on Some Medicinal and Essential Oils. By P. L. Simmonds, F. L. S. 204
Answers to Correspondents 208
Treatment by Drugs 208
Nut Cracking 209

Correspondence,

London Letter 211
Berlin Letter 212
New York Letter 214
The International Pharmaceutical Congress, Chicago, U. S., August 21, 1893 215
Pan-American Medical Congress 217
Four Years of Student Life in Europe 218
Iron City Druggists 220
Imports of Drugs, etc., at the Port of New York, for the Month of April, 1893 222
Book Reviews 223
Facetiæ 224
Abstracts and Translations 226
Pharmaceutical Progress 231
Notes and News 235
Trade Supplement 237

ERNST SCHMIDT.

Ernst Schmidt was born at Halle-on-the-Saale, on July 13, 1845. In his native city he first attended the public school, later the High School endowed by Francke, leaving it in the autumn of 1861 as an "Oberprimaner," in order to devote himself to the study of pharmacy in the Hirsch Apotheke, of Halle-on-the-Saale, under the direction of Colberg. After passing the assistants' examination, and acquiring practical experience at Neuwild, Mainz, Freiburg (Switzerland), and Geneva, he removed to Erfurt on April 1st, 1868, to serve his term of military service. In April, 1869, he applied himself to the further study of pharmacy, worked in the chemical laboratories of Siewert and Heintz, and attended the lectures of Heintz, Engler, De Bary, and Knoblauch. During this period, in recognition of his investigations with the cubebs, Schmidt was awarded the first prize established by the Hagen-Buchholz endowment—the gold medal.

After successfully passing the State pharmaceutical examination in May, 1870, Schmidt applied himself at the Halle High School to special chemical and general scientific studies. These were interrupted, however, by the breaking out of the Franco-Prussian War, in which Schmidt participated from beginning to end in the capacity of Field Apothecary as a member of the Fourth Prussian Army Corps. He was not able to return to Halle before June, 1871, when he resumed his interrupted labors. In November of the same year he accomplished one of the steps of the German university career (technically termed "*promoviren*") as a result of his experimental researches on the action of liquid phosgene upon amide.

After subsequently passing the "*Abiturientenexamen*" at the *Realgymnasium* of Aschersleben, Schmidt removed to Berlin in order to continue various studies. In April, 1874, he formally assumed the duties of a Privatdocent of Chemistry after completing an examination of chrysene and anthracene. In April, 1878, he was appointed Professor Extraordinary, and in July, 1884, full Professor of Pharmaceutical Chemistry, at the University of Marburg. The latter position he still occupies, in connection with his other post as Director of the local Institute of Pharmaceutical Chemistry.

Aside from his manifold duties as a teacher, and his purely scientific labors, Schmidt has found time and leisure to render service in other directions. Thus, he acted as Secretary of the Commission intrusted with the publication of the German Pharmacopœia, Edition II, and he is now technical member of the standing Imperial Commission for the preparation of the German Pharmacopœia. Moreover, since the year 1890 he has been publishing the *Archiv der Pharmacie* in conjunction with H. Beckurts.

In the year 1883, Schmidt was made honorary member of the New York College of Pharmacy, in 1884 member of the Kaiser Leopold Academy of Scientists, in 1892 honorary member of the Netherland Apothecary Union.

Amongst the larger works published by Schmidt are the well known Text-Book of Pharmaceutical Chemistry, in two volumes, now appearing in its third edition, and an Introduction to Qualitative Analysis, of which the third edition has just appeared.

More than one hundred and twenty lesser and greater experimental investigations have been published by Schmidt up to the year 1893, including sixty-two dissertations, exclusive of the labors connected with the third edition of the German Pharmacopœia and its supplement.

A PLEA FOR MORE DESIRABLE AND MORE DEFINITE METHODS OF DETERMINING DISTINCTIVE TESTS FOR NON-TOXIC AND POISONOUS ALKALOIDS AND TOXIC PTOMAINES.

The recent murder cases tried in New York, of Harris and Dr. R. W. Buchanan, have demonstrated the fact that there is yet much room for extension of knowledge of absolute tests as to identity of morphine, when the usual reactions relied upon in the stereotyped tests of the schools and books were found most unreliable.

Professor Vaughan showed clearly that he could with glucose cause the identical reactions produced by the tests used, which were claimed to prove the presence of morphine.

In the Buchanan case, Professor Witthaus of New York proved positively for the prosecution that he found morphine in the remains of the suspected victim; when, however, it was developed that he had employed a process (Erdmann-Uslar modification of Stas's) for the determination of morphine and similar vegetable alkaloids which is no longer regarded as trustworthy, and which has been discarded by modern expert toxicologica chemists as of no value in the separation of morphine from a mixture, say, of morphine and animal alkaloids simulating that body, it became apparent that the proof adduced had lost its positive value. The chief and grave objection to the use of the Erdmann-Uslar modification of the Stas process, or any modification in which amylic alcohol is employed to extract the acidified residue, lies in the fact that that fluid is *par excellence* the best solvent for ptomaines or animal alkaloids and is sometimes known to contain basic bodies as a natural constituent.

When it is known that a number of the ptomaines or animal alkaloids formed in the human body after death respond readily to the reagents employed in producing the so-called characteristic color reactions of morphine and other alkaloids of vegetable origin, it will be at once apparent how worthless are any deductions based on their value as a means of detecting the presence of these alkaloids, and particularly of morphine, when applied to simple solutions of the residues of amylic alcohol extracts.

The proper fluid for use in the extraction of vegetable alkaloids from a carefully prepared solution of suspected extractive matter, is acetic ether. This was demonstrated by Dr. Scheele, who was called for the defense. He quoted several recent authorities of high standing in general and forensic chemistry in corroboration of his statements, and was emphatic in his conclusions regarding the fallibility of the tests and other means of isolation and identification used by the experts employed by the prosecution.

Since the intensity or weakness of the color produced in extractive solutions of suspected matter by the application of any of the tests formerly relied upon is not indicative of the quantity or even identity of any alkaloid that might be present in such solutions, it surely goes without saying that a more definite method of determining the kind and quantity of poisonous alkaloids and other poisons, if any, should be at once adopted and used as a standard or legal method in all future chemico-legal cases.

DUTIES OF EMPLOYERS TO EMPLOYEES.

The *American Druggist* discusses this question, and reaches the following conclusions from its investigations of the law.

The manufacture of pharmaceutical preparations is occasionally attended by considerable danger, and it unfortunately sometimes happens that there is an occasion to determine in a court of law the degree of responsibility of the employer for damages inflicted upon an employé, through explosions or accidents. Such a case, it will be remembered, occurred some time since, when an explosion in the building occupied by Wiley & Wallace caused serious injury of several employés, and, in fact, the death of one or two.

While an employer is not a guarantor or insurer of the safety of the place in which he puts his servant, or of the safety of the tools or machinery he furnishes, he is is every case bound to exercise that care and diligence (proportionate to the occupation and the occasion) which a reasonably intelligent and prudent man would use under like circumstances, both to provide and keep in reasonably safe condition the place of work and the machinery and appliances requisite to its performance. It has been decided at law that this duty is personal to him, and cannot be so delegated as to relieve him of liability. (Union Pacific Ry. Co. *vs.* Jarvi. U. S. Circuit Court of Appeals, 8th Cir. 53 Fed. Rep. 65.)

It does not follow, however, that an employer is responsible for every damage inflicted on employés, as the perils arising from the carelessness and negligence of fellow-servants are among the risks which one who engages in the employment of another for the performance of specified services for compensation takes upon himself. It is only the master's duty to exercise reasonable care to provide for his servants fit and competent persons as co-laborers. Those have frequently been held to be fellow-servants, within the meaning of the law affecting the responsibility of masters for their negligence, who have the same employer, are engaged in the accomplishment of the same general object, are acting in one common service, and derive their compensation from the same source. But the better doctrine is that the question of the master's responsibility in case of an injury is determined, not by the rank or grade of the offending servant, but by the character of the particular act or omission to which the injury is attributable. (Sullivan *v.* New York, N. H. & H. R. Co. Supreme Court of Errors of Connecticut. 25 At. Rep. 711.) And it may be added, that if it is an act that the law implies a contract duty upon the part of the employer to perform, so that the person performing it is acting as vice-principal as to that particular act, then the latter is not a fellow-servant of his fellow-laborers.

The doctrine of assumption of the risk of his employment by an employé has usually been considered from the point of view of a contract express or implied, but, as applied to actions of tort or civil injury for negligence against an employer, it leads up to the broader principle expressed by the maxim, "No injury is done in the eye of the law, where the person injured consents." One who, knowing and appreciating a danger, voluntarily assumes the risk of it, has no just cause of complaint against another who is primarily responsible for the existence of the danger. As between the two, his voluntary assumption of the risk absolves the other from any particular duty to him in that respect, and leaves each to take such chances as exist in the situation, without a right to claim anything from the other. (O'Maley *v.* South Boston Gaslight Co. See Supreme Judicial Court of Massachusetts, 32 N. E. Rep. 1119.) In such a case there is no actionable negligence on the part of him who is primarily responsible for the danger. If there is a failure to do his duty according to a high standard of ethics, there is, as between the parties, no neglect of legal duty.

THE BICYCLE FROM A MEDICAL STANDPOINT.

One sometimes wonders why the pharmacist does not use the bicycle to stir up the dull currents of his sluggish blood due to his sedentary occupation and confinement to routine work. It is necessary for him to get at some time exercise in the open air.

Mr. Pope, the President of the Pope Manufacturing Co., makers of the famous Columbia bicycles, writes us that in some States they are imposing a tax on bicycles. That such would be prejudicial to the health of many who now use them, would be certain. He points out the facts that 'cycles have been the means of leading to great improvements in the roads of the country; and many a workman among the tenement population in large cities may now, having a wheel to take him to town, remove with his family to suburban districts, far from the madding crowd, and thus improve his own capacity for work and the health of his family. State taxation would militate against numbers of these. How to graduate the tax according to the value of the 'cycle, would indeed be a difficult task for the assessor of taxes, and in fact probably impossible.

It would appear that this measure is among those that are unjust and restrictive of trade, and can bring no good purpose to any one, and should be abolished in States where they are now in existence.

It may be interesting to druggists to learn the opinions of authorities as to the benefits secured by cycling. The daily press are prone to exaggerate the dangers due to riding and racing bicycles, but are not likely to be supported in their opinion by the hundreds of thousands who use them, or by the public at large.

On looking over the evidence of experts on the utility and evils of 'cycles, it appears that prevailing sentiment is in favor of cycling, as may be judged by the following expressions of opinion:

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One author, T. H. Carmichael, M.D., who has given considerable attention to the investigation of this subject, says as to indications and contra-indications:

As a form of exercise, its growing importance makes it a subject for discussion by the medical profession, in order that its advantages and disadvantages may be understood and its indiscriminate use and abuse prevented.

In riding a wheel correctly, the whole muscular system is exercised—the muscles of the trunk and upper extremities in the act of balancing, and the extensors and flexors of the leg in the act of propulsion.

In the wheel, therefore, we have an agent that may play an important part in the rôle of preventive medicine. Especially is it applicable to that large class of diseases characterized in middle life by interstitial changes in various organs, such as lungs, liver, and kidneys. Many of these cases can be diagnosed in advance, as they usually give evidence in early life through their over-fondness for nitrogenous foods and a tendency to myalgia in various parts—these myalgic pains being usually due to faulty elimination of waste material, and its consequent irritation. In many instances such patients lead sedentary lives, and thus aggravate their condition.

The exercise of cycling helps these cases by supplying the oxygen necessary for the elimination of the waste material, and by so stimulating the excretory organs that they are enabled to perform their functions in a normal manner and thus prevent the gouty manifestations of middle life.

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In the equally large class of nervous diseases bicycle-riding is just as efficacious. This subject has been ably discussed by Dr. G. M. Hammond, in an article on "The Bicycle in the Treatment of Mental Diseases," in the January, 1892, number of the *Journal of Nervous and Mental Diseases.*

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Varicosed veins have disappeared after a course of riding, several cures having been reported.

In chest troubles, especially lack of expansion of the lungs, it is very valuable—more so than most forms of calisthenics, because the 'cyclist usually seeks a healthful suburban atmosphere, and the lungs are invigorated by the pure air.

The too rapid accumulation of fat can be readily controlled by taking long rides and at the same time abstaining from liquids.

On the contrary, moderate use of the wheel, avoiding hill-work and freely satisfying the thirst produced by riding, usually produces a gratifying increase in weight.

The advantages of bicycling apply to both sexes. With loose-fitting garments and a proper mount, refraining from riding during the menstrual period, moderate use of the wheel will do much to maintain good health in women.

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Seneca Egbert, A.M., M.D., Lecturer on Hygiene, Drexel Institute, Philadelphia, in the *University Medical Magazine*, November, 1892, makes a strong plea for the 'cycle, and points out its therapeutic application.

In the first place, as an exercise cycling is superior to most, if not all others, at our command. It takes one into the out-door air; is entirely under control; can be made as gentle or as vigorous as one desires; is active and not passive; takes the rider out of himself and the thoughts and cares of his daily work; develops his will, his attention, courage, and independence, and makes pleasant what is otherwise often most irksome; moreover, the exercise is well and equally distributed over almost the whole body, and, as Parkes says, when all the muscles are exercised, no muscle is likely to be over-exercised. This general muscular exercise also has its direct effect upon the other and vital organs of the body, especially the heart, lungs, and digestive organs; and the improvement in general health and digestion after a few weeks' riding is by no means illusory or fleeting. We all know that the trouble with many of our patients is purely functional, and that their maladies have been brought on by lack of pure air, too little exercise, and too much mental worry over their work or business. For these the bicycle furnishes an agreeable remedy.

Take a case of nervous or anæmic dyspepsia, of hepatic or intestinal torpor; the increase in the flow of the blood current, the gentle vibration, and the additional elimination of waste matters through lungs and skin, all results of a ride on the wheel, are just what we desire for the cure of our patient. Or with one of a tuberculous diathesis or with incipient phthisis, how much depends upon teaching him to breathe properly, *i.e.*, fully and deeply, and to spend much of his time in the open air! This the bicycle will do for him, perforce. Cases, also, of neurasthenia, melancholia, and other nervous troubles, will derive much benefit from our present hobby, for, in addition to the above hygienic elements, the wheelman must develop—whether he will or not—his will, his independence and self-reliance, and the accurate control of all his muscles. Those of rheumatic tendencies, especially, will find that regular and systematic riding will do much to keep the disease in abeyance, and even to act as a cure. Someone has said that every muscle is a little heart; and surely no better means can be devised of eliminating deleterious waste matters from the whole system than the general and active use of all the muscles, voluntary and involuntary.

Undoubtedly the bicycle may do good by drawing a too studious or house-loving youth or maiden into the open air and active exercise.

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The blue-rimmed prize winner appears this year as the Columbia Model 30, weight 30 pounds, and has jumped at once to the top notch of popularity. Built upon the lines of the Columbia Racer, on which were made in '92 the world's records from one-quarter to five miles, the Columbia Model 30 has shown itself to be the fastest road wheel on the market. It is fitted with Columbia pneumatic tires, is regularly equipped with the elliptical sprocket wheel and finished in black enamel, including rims. Careful construction, good workmanship, finest material, and elegant finish make this machine worthy of the position it has taken as the leading light road wheel among all 'cycles. If you wish to obtain such, you should apply to the Pope Mfg. Co., Boston, New York, Chicago, Hartford, or their agents.

TARIFF RULINGS.

The *Oil, Paint and Drug Reporter* points out in a recent number the operation of the tariff law, and believes that some of the decisions of the Secretary of the Treasury, defining under what sections or paragraphs in the law certain drugs should be classified, have a different effect from what was contemplated by the framers of the original bill. A case in point is that where the Secretary of the Treasury rules that muriate of cocaine shall be classified under paragraph 76, and that it shall pay duty at the rate of 25 per cent. *aa valorem.*

Heretofore this article has been admitted under paragraph 74, as a medicinal preparation, paying duty at the rate of fifty cents per pound. As the article costs upwards of five dollars per ounce, it will be seen that the ruling makes an important increase in the duty.

This decision, it is stated, was made in accordance with a recent court decision making the duty on chloral hydrate 25 per cent. *ad valorem*, instead of fifty cents per pound. As chloral hydrate is worth only about one dollar per pound, the change in this case is a reduction of fully one-half in the duty assessed.

That both these products are properly classified may not be questioned, but the different effect shows the absurdity of what are popularly called "drag-net" clauses in the tariff law. There are too many paragraphs general in their character, with wide differences in their effect on the articles embraced therein. The list of articles specifically enumerated, especially in the chemical schedule, should be greatly extended.

ANTI-TRUST LEGISLATION.

Commenting on an anti-monopoly bill, the *Oil, Paint and Drug Reporter* says:

Anti-monopoly legislation appears to be the popular fad in order to curry the favor of the great labor organizations. In the New York Legislature "An Act to Prevent Monopolies in Articles of General Necessity" was passed late in the session. There was considerable opposition to the bill—on the part of some because they believed it would interfere with legitimate trade, and on the part of others because they did not regard the measure radical enough.

There appears also a well grounded opinion among eminent jurists that the bill will not give the relief that its advocates expect and aimed to secure. However that may be, if the bill fails of its purpose its defects or shortcomings can be remedied by future legislation. The two sections of the bill to which objection was made, and which may be taken as embodying its principal features, are as follows:

"SEC. 1.—Every contract or combination, in the form of trust or otherwise, made after the passage of this act, whereby competition in the State of New York in the supply or the price of any article or commodity of common use in said State for the support of life and health may be restrained or prevented, is hereby declared illegal.

"SEC. 2.—Every person who shall, after the passage of this act, make any such contract or engage in any such combination, shall be deemed guilty of a misdemeanor, and on conviction thereof shall be punished by a fine not exceeding $5,000 or by imprisonment not longer than one year, or by both such fine and imprisonment."

It will be noticed that the provisions of Section 1 are far-reaching, but they are also easily evaded. It is doubtless difficult to so frame a bill as to suppress or prevent the abuses aimed at, without hampering legitimate trade, and there are many, very many, who regard all legislation of this character as tending to obstruct trade and discourage large commercial and manufacturing undertakings. That there are abuses, must be admitted, and it is only by a fair test of the measure passed that the feasibility and adequacy of the bill as a remedial measure can be determined.

AUSTRIAN APOTHECARIES TO VISIT THE WORLD'S FAIR.

The *Pharmaceutische Post*, of Vienna, Austria, of April 23, 1893, gives a detailed report of a journey to be undertaken by Austrian apothecaries to the World's Fair; the club of apothecaries to undertake the journey evidently under the leadership of Dr. Hans Heger, editor of the *Pharmaceutische Post*, and to take the following route: Nuremberg; Frankfort-on-the-Main; Mayence; Coblentz; Bonn; Cologne; Amsterdam; Rotterdam; Harwich; Liverpool. From there they go to Quebec, Montreal, Niagara Falls, Detroit, and Chicago.

With reference to their visit to Detroit, the *Post* says:

"We now proceed along the shores of the Erie Lake, to Detroit, where we will have the opportunity to inspect the grandest pharmaceutical establishment of the world, namely, the laboratories of the world-famed firm of Parke, Davis & Co., a description of whose works was given in a late number of this journal, and which firm is ever ready to offer to their Austrian colleagues the freedom of their establishment."

PRACTICAL PHARMACY.

THE SILVER-WORK OF DISPENSING APPARATUS.

BY THOMAS WARWICK.

Nothing adds so much to the appearance of an apparatus as well polished silver-work, but nothing detracts so much from its appearance as draught-arms, syrup-labels, or name-plates that have become tarnished through lack of the proper precautions. Yet there is no secret in the method of keeping silver-plating bright; it is merely a matter of care, and there is no excuse whatever for bad-looking silver-work.

When buying a dispensing apparatus, the druggist should see to it that there is not an excessive amount of silver-work to look after, that it is easily accessible, and that it is not so intricate in design as to make it difficult to clean properly. These points are important, for when a task has to be often repeated it is well that it should be easy to perform, as otherwise the soda-fountain boy will be likely to shirk the work or perform it in a careless manner.

Moreover, it is advisable to see to it that the silver-plating is of good quality. It makes a vast difference what thickness the silver coating has that covers the external metal parts of the apparatus, for it stands to reason that a plating of double or triple the thickness should last twice or three times as long. The apparatus is just as handsome at the start with a thin plating, and the manufacturer saves perhaps a few ounces of silver, but his economy is effected at the expense of the confectioner, who, when the silver wears off, is obliged to go to the trouble of taking off the metal parts of his apparatus, shipping them in to be replated, and has to let his apparatus stand idle for a couple of weeks until the silver-work comes back to him, scratched up, perhaps, in transportation. He has paid some twenty-five to fifty dollars in all, that the manufacturer might save three or four. Truly it seems rather an unequal transaction, and druggists should insist upon receiving a good quality of silver-plating, even if they have to pay something extra for it.

But it is not all to secure a heavy plating; it requires some attention to keep it in good condition. Even though a good plating will not readily wear off, it will nevertheless become easily tarnished or scratched. And a tarnish or a scratch will considerably diminish the value of the apparatus—so much, in fact, that I would strongly advise all pharmacists to keep their apparatus in perfect condition externally, for the expense of doing so will be amply repaid by the increased attractiveness of the soda-water counter. It is as great a disadvantage for an apparatus to have tarnished silver-work as for a young woman to wear faded ribbons—and that is saying a great deal!

The scratching of the silver-work may occur through accident—in which case, of course, it is unavoidable; but the most frequent cause of scratching is the lack of proper precautions in screwing on bolts and draught-arms, and in these cases the trouble both can and should be avoided.

Even with the best-regulated draught-arms, it is occasionally necessary to take them apart for repairs, the repairs usually consisting in inserting a new washer or packing. Now, in nine cases out of ten the druggist will apply the wrench to the draught-arm to unscrew it, and will notice a couple of days later that the silver-plating has been scratched in some way. A little reflection would have convinced him beforehand that the rubbing of the metal wrench against the silver-plating could scarcely fail to do otherwise than scratch it. A little further reflection would also probably have suggested the idea that a small piece of chamois-skin inserted between the wrench and the draught-arm would allow of the unscrewing of the latter without scratching the plating in the least.

In fact, it is a safe rule to screw up silver-work as much as possible with the hand alone; and when a greater force is required, a piece of chamois should invariably be placed between the wrench and the silver-plated nut.

As to the tarnishing of the silver-work, this is due to many distinct causes, but the principal one is undoubtedly the contact of the human hand. Any one who doubts this need simply go into a third-rate dispensing establishment, and he will notice that it is the silver-plating at the wheels of the draught-arms that invariably becomes first tarnished, and in the very spots where it comes into contact with the dispenser's fingers. And this tarnish is greater the less careful the dispenser's boy is to wipe his hands before turning on the draught-arms. In fact I think I am safe in saying that the tarnish is in most cases due to the perspiration of the operator's hands, and that it is in all probability due to the sulphur which forms an ingredient of human perspiration—sulphur having a strong influence in tarnishing silver, as any one knows who has fumigated with sulphur in a room containing silver, or who has carried around our unwieldy sixty-five-cent-dollars in his trousers pockets in summer-time. Fortunately this tarnish is superficial, and I shall now proceed to consider the best methods of preventing it or of removing it in those cases where it was not prevented.

In the first place, then, the dispenser should make it a point to rub the silver-work daily with a dry piece of Canton flannel. This keeps it clean and bright. Moreover, if any drops of water or syrup chance to fall upon the silver-work, they should at once be carefully mopped off, for nothing favors chemical change so much as moisture.

Occasionally, however—say once a week—it is necessary to resort to other means. Some authorities recommend using plain water rubbed on with a chamois-skin, and afterwards wiped dry; others advise soap and water; but probably the best mixture to use regularly is a mixture of alcohol and whiting, which should be well rubbed over the silver-work and then wiped dry. Often when the silver-work has become spotted or tarnished, and the confectioner imagines that the plating has worn off, all that is really necessary is a recourse to alcohol and whiting, with a liberal admixture of elbow-grease.

There are a number of polishing liquids on the market for cleaning silver-plating, but I do not know of any that is better than a combination of alcohol, whiting, and jeweler's rouge. The following are the proportions to be recommended:

Jeweler's rouge (peroxide of iron)	1 ounce.
Whiting	4 ounces.
Alcohol	8 ounces.
Water	12 ounces.

Mix these well together, and keep the preparation in a bottle where it will be convenient for use when desired. Moreover, as the heavier ingredients will constantly precipitate, it is necessary to shake the bottle well every time before using. The dispenser should rub the mixture on the silver-work with a soft cloth, and keep on rubbing until it is dry. A fine polish may afterwards be produced by rubbing well with a dry flannel. This mixture (the formula for which I have just given) produces a much more brilliant polish than whiting and alcohol alone.

To produce a really pleasing effect, the polish should be carefully applied to all the cracks and interstices in the silver-work. As the cloth used will not readily reach these portions in most apparatus, a small brush should be used for such parts as are not easily accessible.

A good quality of whiting, free from grit, must be employed, for grit of any kind in the polishing liquid will scratch the plating. What is known commercially as "precipitated chalk" is usually a whiting of good quality, and answers very well for this purpose.

In rubbing silverware, it is always advisable to rub as much as possible in the same direction, as the burnish is thus better preserved.

In cases where the tarnish is of long standing and is difficult to remove by ordinary means, the following method is recommended: "Dissolve two pounds of cyanide of potassium in one gallon of water, and dip into the solution the article that is to be cleaned. The article should then be taken out at once, rinsed in clear hot water, and wiped carefully with a piece of Canton flannel." Care must be taken not to allow the silver-plated articles to remain in the solution for any length of time. They should be merely dipped in and taken out at once, and no time should be lost in rinsing them in a bucket of hot water that should be close at hand for the purpose. The operator should also remember that the solution of cyanide of potassium is an active poison, and hence should be thrown away immediately after being used, in order to avoid any possibility of accident, for even in pharmacies accidents will sometimes happen.

Perhaps, however, the best remedy for tarnished silver is to prevent it from tarnishing. Even the Chinese recognize the value of curing an evil before it occurs, for it is related that they pay their doctors only while they are in good health, but the fees cease as soon as illness of any kind sets in. This is a most rational plan, since the doctor's interest lies in keeping his clients in the best possible condition, instead of being tempted to prolong convalescence.

This system of preventive therapeutics may with great advantage be applied to the silver-work of the dispensing apparatus. Jewelers who keep large quantities of silverware in their show-windows, where they are exposed in every sense of the word, and would tarnish in a couple of days, are obliged to take special methods to keep them bright; and the confectioner who wishes to keep his silver in good condition can with advantage follow the same plan.

Evidently, as the tarnish arises from contact with air and moisture, the process consists simply in shutting off all communication between the air and the silver-plating. To accomplish this, jewelers cover their silverware with a thin coating of collodion, evenly spread over the surface so as to effectually exclude the air from the polished surface. The ordinary commercial collodion is used for this purpose, and is applied by means of a brush. The collodion should be of about the consistency of a thin syrup, and can be usually obtained of just the right density. Should it, however, be too thick, the druggist can reduce it with equal parts of alcohol and ether.

During the winter season many dispensers put aside their soda-fountains until the return of spring; and in these cases, especially, does the silver-work require protection of some sort. The simplest protection, although an excellent one, is to cover all the silver-work, including the draught-arms, the name-plates, the syrup-labels, and even the very screws of the apparatus, in fact every particle of silver that shows, with a liberal paste of whiting and water, seeing to it that the paste is uniformly distributed and that no bare spots are left. This paste will preserve the silver-work very effectually, and can be easily rubbed off again when the apparatus is to be used. The coating of collodion already mentioned is also excellent for preserving the silver-work during the winter.

So far I have spoken only of the methods of keeping the silver-work of the apparatus clean and bright, but I should now like to say a few words in regard to the metal-work itself, and especially in regard to the name-plates and the syrup-labels. A large silver plate on the side or front of an apparatus always makes a most pleasing addition to the general appearance—so much so that a small box-apparatus would appear rather bare without its name-plate. It is the name-plate, in fact, which has given rise to the two classes known respectively as "right-hand" and "left-hand" apparatus, which two divisions have perhaps given rise to more error and delay than any other one cause. The facts of the matter are as follows: On low-priced apparatus the manufacturers, as a rule (although to this there are exceptions), use a name-plate only on one side of the apparatus, that side being always the one that is to face the customer when the apparatus is in position on the counter. I confess that for my part I approve of the policy of those manufacturers who use a name-plate on both sides, even of their cheapest apparatus, for every druggist will at some time or other wish to change the arrangement of his store, and in these cases it is sometimes a great convenience to be able to alter the position of his apparatus. At present, however, druggists should always be particular to state whether a right- or a left-hand apparatus is desired. A right-hand apparatus is one in which, if you are facing the apparatus as though to draw a tumbler of soda-water, the name-plate will be on the end at your right hand; while a left-hand apparatus is one in which the name would be at your left.

These distinctions may appear somewhat confusing at first, but if we remember that in speaking of a mantelpiece or a bureau-drawer we say the left-hand side when we mean the side at our left when we are facing it, we will see that in speaking of dispensing apparatus it is also proper to call its left-hand side what would really be its right-hand side if it were a living being.

As regards syrup-labels, these are made in all shapes and sizes, from the rosette and star to the plain oblong. The name of the syrup is usually moulded in the metal, and after the silver-plating the letters are commonly filled in with a black varnish. If at any time this varnish becomes scratched, and the name illegible, the druggist can readily fill it out again with common black paint.

The syrup-labels should be perfectly legible so that the customer can control to some extent the dispensing of his drink. They should, moreover, be easily removable, and a few extra ones should be kept in stock, so that the druggist may change his syrups at different times without being obliged to resort to the humiliating necessity of drawing chocolate syrup from a can labeled "lemon." These syrup-labels, as well as those for the mineral waters, are either fastened on by screws, or what is still simpler, they terminate in a spring, so that when pushed into a hole in the marble front of the apparatus the spring expands and holds them in position until it is desired to remove them, when they can be readily pulled out.

In concluding this article, I would repeat that the beauty of every dispensing apparatus depends in great measure upon the silver-work, and it is therefore important for the druggist to ascertain before purchasing that this is pleasing in style and that the silver-plating is of a substantial thickness. After this it is his own fault if he does not keep the silver portions as lustrous and bright as on the first day when he received the apparatus.

CHEMISTRY.

ON THE TOXIC CONSTITUENTS OF JATROPHA CURCAS AND CROTON TIGLIUM.[*]

BY PROFESSOR R. KOBERT.[†]

In the following I submit a brief report on a series of experiments which one of my pupils, Mr. August Siegel ("Magister"), has recently performed in my institute and under my direction. This series of experiments is the continuation of two other series which I caused to be executed previously through Hermann Stillmark[‡] and Ernst von Hirschheydt.[§]

I. On Curcin.

Through Stillmark and Hirschheydt I made manifest that the seeds of *Ricinus communis* and *Croton Tiglium*, rendered completely devoid of fat, are of enormous toxicity, and that this toxicity is not to be accredited to either a glucoside, an alkaloid, or an acid, but exclusively to a so-called toxalbumin, which I was enabled to produce in abundance and of tolerable purity, particularly from expressed Ricinus residue. In accordance with the method proposed and published by me, it is manufactured for the market by E. Merck, of Darmstadt. Since it is not patented, any American firm is, of course, at liberty to prepare this highly interesting poison. Further information respecting it is to be found in my "Lehrbuch der Intoxikationen" (Stuttgart, 1893), just published. *Ricin is the first vegetable toxalbumin which has undergone a more precise pharmacological investigation.* Subsequently, through my pupil Kellin, I showed that the *abrin* contained in *Abrus precatorius* stands close to ricin in its action. That both toxalbumins are not identical, has been established by Ehrlich. Siegel has likewise been able to prepare from the hulled seeds of *Jatropha Curcas*, L., as well as *Curcas purgans*, Endl., which were carefully exhausted of their oil, a toxalbumin—Curcin. The seeds contain:

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[*] Translated by Joseph Helfman for the BULLETIN OF PHARMACY.

[†] From the Pharmacological Institute of the University of Jurjew (formerly Dorpat).

[‡] Ueber Ricin. *Arbeiten des pharmakologischen Institutes zu Dorpat*, herausgegeben von R. Kobert. Bd. iii, 1889, p. 59.

[§] Ueber die Crotonolsäure. *Ibidem*, iv, 1890, p. 5.

Water	7.20 per cent.
Ash	10.20 " "
Oil	33.86 " "
Sugar, coloring matter, and cellulose	47.83 " "
Albumin	1.11 " "

Whether this 1.11 per cent. represents a mixture of toxic and non-toxic albumin, cannot be determined, in view of the deficient character of our present knowledge of the albuminoids. It is sufficient to know that this 1.11 per cent. albumin, or rather the portion of toxalbumin therein contained, conditions the toxicity of the expressed residue (dregs). The toxic symptoms in the living organism consist in vomiting and bloody diarrhœa. An autopsy of the animals succumbing with paralytic symptoms, disclosed multiple ecchymoses; these are particularly observable in the intestinal tract, and may simulate the tableau of a violent enteritis (in reality our poison is no irritant). Supported by physiological experiments with the blood, and microscopical examination of the organs of the poisoned animals, I must assert *that the effects of ricin and curcin differ widely*. Whilst ricin manifests its toxic power by causing the red blood-corpuscles to cohere, curcin bears no relation whatever to the red blood-corpuscles; its poisonous action has to do with fibrin-formation, which it suppresses when given in large doses, and promotes when given in minimal doses. Thus are produced intravital coagulations, which in their turn result in obstruction and laceration of the vessels. We succeeded in showing the existence of such vascular obstructions in the walls of the crops of roosters, Whether introduced per os or in solution directly into the blood, curcin manifests the like toxic power. The animals experimented on were domestic fowls and cats. In the roosters there ensued, through infarction of the vessels of the crest, blackening and gangrenous death of this organ. Quite the same modifications of this organ have been shown by myself and my pupil, A. Grünfeld,* to be characteristic of poisoning from sphacelinic acid which I discovered; and, in fact, this resin-acid, when given to fowls, likewise produced coagulation in the vessels, as Grünfeld's † illustration clearly shows.

Curcin decomposes very readily, and does not withstand either heat carried beyond 50° C. or complicated methods of precipitation, being converted under such conditions into an inert modification. It has no toxic effect upon isolated muscles, upon the pulse, or upon the heart; the defibrinated blood, moreover, is not at all modified by it. The blood-pressure is moderately lessened by it. In frogs, like all the toxalbumins, it is non-poisonous. There is no method for determining the presence of the substance, which will permit us to distinguish and separate it from other albuminous bodies in the organism of the poisoned animal.

II. On Curcas Oil.

It has been repeatedly conjectured that the Curcas Oil contained the triglyceride of ricinoleic acid. Siegel showed first that this is not the case. On the other hand, it was an easy matter to establish the presence in the oil, of palmitin, myristin, and a hitherto unknown fat. In order to isolate the latter, the potash-soap solution of the curcas oil was fractionally precipitated with cold saturated solution of baryta. The fatty acids of the first fractions were solid, and proved, on elementary analysis, to be palmitic acid. On further precipitation, fractions were obtained with acids of the consistency of butter, which were identical with the isocetic acid of Bouis. This isocetic acid, however, is a mixture of palmitic acid and myristic acid. A further fraction yielded only the barium salt of the myristic acid. The last fraction yielded a fluid, fatty acid, which solidifies at a temperature under 13° C., and is very similar to the ricinoleic acid in viscosity.

Found:	C.	H.
Analysis I	70.19 per cent.	11.60 per cent.
Analysis II	70.29 "	11.49 "
Analysis III	70.09 "	11.54 "
Average	70.15 "	11.54 "
Estimated for $C_{15}H_{28}O_3$	70.31 "	10.90 "

This new, hitherto altogether unknown acid belongs to the series of ricinoleic acid $C_nH_{2n-2}O_3$; *stands, however, lower in this series than ricinoleic acid* ($C_{18}H_{34}O_3$), which contains far more carbon. The proportion of sodium in the sodium salt of this acid was found to be 7.5 per cent. Na, which corresponds well with the formula $C_{15}H_{27}NaO_3$, requiring 8 per cent. It corresponds, moreover, with the sodium salts of the two next higher members ($C_{16}H_{30}O_3$ and $C_{17}H_{32}O_3$) of the series. The determination of the barium in the barium salt yielded 18.89 per cent. of Ba, whereas for the salt of the acid $C_{15}H_{28}O_3$ 20.9 per cent. Ba is requisite, and for that of the acid $C_{17}H_{32}O_3$, 19 per cent. Ba. I believe that further analyses will yield a somewhat greater content of barium.

Obviously, therefore, we have to deal here with an acid belonging to the ricinoleic acid group, and containing less carbon than the ricinoleic acid, to which the name Curcanoleic Acid (*Acidum curcanolicum*) will have to be applied. In the oxidation of the acid by means of potassium permanganate, we obtained sebacic acid, butyric acid, and some oxalic acid—substances which are also obtained in the oxidation of ricinoleic acid.

Testing the curcas oil on animals and on human beings, it was found that *the fresher the oil, the greater its potency.* Mr. Siegel himself, after taking 8 drops, was seized with violent vomiting and severe diarrhœa. In animals the symptoms are the same, only relatively large doses are used.

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* *Arbeiten des Pharm. Instit. zu Dorpat*, viii, 1892.

† *Ibidem*, iv, 1890, p. 1.

We will first report an experiment in which entire but very old seeds were employed, and in which the effects of the curcin and of the curcas oil were produced together. After eating fifteen to twenty seeds, which tasted very well, a robust young man, after half an hour, showed symptoms of nausea, which soon changed into violent vomiting, the latter repeating itself fifteen times within an hour and finally becoming bloody. After the very first vomiting spells, pronounced diarrhœa supervened, but without pain or blood. Even the following day the patient felt very much overcome and experienced some nausea; the vomiting and diarrhœa, however, had ceased.

Indeed, there can be no doubt that *the toxic action of the curcas oil is more powerful than that of the castor oil, but feebler than that of croton oil.*

III. On Crotonoleic Acid.

Croton oil owes its toxicity, as I shall set forth hereinafter, not to one, but to two substances. With respect to both, existing literature has thus far been able to give precious little information of a chemical nature.

The active principle of croton oil has long been the subject of ardent discussion, being classified at times as a volatile and at times as a fixed body.

Pelletier* and Caventou,† who through error investigated the seeds of croton instead of the *Jatropha Curcas*, reached the conclusion that croton oil owes its activity to a volatile acid named "Jatropha acid." Buchner and Brandes‡ coincide with the views expressed by both these authors.

Our knowledge of the nature of croton oil has been materially enlarged by the labors of Buchheim.§ This author designates the very toxic acid produced by him from croton oil Crotonoleic Acid, and expresses himself as decidedly opposed to the views of Pelletier and Caventou, according to whom the action of the croton oil is seated exclusively in the volatile and so-called Jatropha acid. The crotonoleic acid of Buchheim, however, as Hirschheydt‖ very properly remarks, was no integral body, as is shown especially by the high content of baryta in the barium combination (=17.8 per cent. BaO) and the relatively feebler action in comparison with the crotonoleic acid produced by Hirschheydt.

Besides the volatile Jatropha acid of Pelletier and Caventou, for a time the crotonin obtained by Brandes and Firnheber¶ was regarded as the active constituent of the croton oil, until Weppen** declared it to be nothing else than an alkaline earth soap (Talgerdeseife).

Pereira†† ascertained, *first*, that the specific acid of the croton oil was of fixed character, not volatilizing at even 100°; *second*, that a substance which is liberated on distillation, violently irritating eyes, nose, and lips, and producing even an erysipelatous inflammation of the skin, possesses no acid properties; *third*, that the oil remaining after removal of a certain irritating substance still retained the characteristic smell, violently irritating the skin and exhibiting an acid reaction.

Schlippe‡‡ terms the substance which he produced from the portion of croton oil soluble in alcohol, crotonol; it is stated to be a polyatomic alcohol.

§§Senier asserts that croton oil is a mixture of two principles: one soluble in alcohol, and producing inflammation; the other a cathartic, insoluble in alcohol. He did not, however, execute analyses of these substances.

The crotonoleic acid which was investigated by Siegel was produced by him, only for the lesser part, directly from croton oil. The relatively greater part was obtained by the purification of the commercial article issued by Merck, of Darmstadt, and this brand is manufactured in accordance with my reports. The properties of both products coincided very well. For purposes of production from the croton oil, a quantity of the latter was used which had been obtained from Leipzig in the year 1883 by Brückner and Lampe, possessing a brown color and being completely soluble in alcohol. 230 grammes of this oil, at our disposal, was saponified on a vapor bath with a solution (saturated under heat) of 40.0 hydrate of barium in water, stirring constantly. The saponification proceeded very rapidly, a pronounced brown color being developed, and the baryta soap depositing at the bottom of the dark brown liquid. The brown liquid was poured off, and the still dark-colored baryta soap was washed out with hot water on the vapor bath until the washings were no longer colored brown. We thus deviated somewhat from the process given by me, according to which the washing should be performed with cold water. The bright yellow baryta soap, consisting of combinations of various fatty acids, was treated with ether, which dissolves only the oleate and crotonoleate of barium; the ether evaporated after filtering, and the residue treated with 90-per-cent. alcohol, into which only the crotonoleate of barium passes over. After the evaporation of the alcohol, the crotonoleic acid was separated off with dilute hydrochloric acid, and was washed with water so long as sulphuric acid and silver nitrate produced turbidity in the washings. Yield of crotonoleic acid = 9 per cent. of the oil.

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* *Nouv. Journ. de Méd.*, t. ii, 1818, p. 172; *Journ. de Pharm.*, t. iv, 1818, p. 289; Buchner's *Repertorium für die Pharmacie*, bd. vi, p. 300.

† *Journ. de Pharmacie*, t. ii, 1825, p. 16.

‡ Buchner's *Repertorium für die Pharmacie*, bd. xix, 1824, p. 185.

§ Buchheim: Ueber die scharfen Stoffe; Wagner's *Archiv der Heilkunde*, Jahr. xiv, p. 4, 1873.

‖ *Arbeiten des Pharm. Inst. zu Dorpat*, bd. iv, 1890, p. 31.

¶ *Archiv des Apothekervereins*, 1823, bd. iv, p. 173.

** *Annalen der Chemie und Pharmacie*, 1849, bd. lxx, p. 254.

†† Huseman, *Handbuch der Toxicologie*, bd. i, 1862, p. 442.

‡‡ Liebig's *Annalen der Chemie und Pharmacie*, bd. cv, p. 1.

§§ *Pharmaceutical Journal and Transactions*, 1878, vol. vii, p. 705.

The purification of the commercial product of Merck, which was colored dark brown, was effected by our resorting to repeated saponification with hydrate of barium. The baryta soap was freed, by washing with warm water on the vapor bath, from coloring-matter which had formed in large quantity; treated with ether; the crotonoleate of barium withdrawn from the residue with alcohol, after evaporation of the ether; then separating off from the crotonoleate, with the aid of hydrochloric acid, the crotonoleic acid. The loss in purification was very considerable, so that the yield of pure crotonoleic acid amounted to only about 30 per cent.

Both products—that obtained from the oil, as also the one secured through purification of the commercial article—were completely identical in chemical and physical properties.

The specific gravity, determined with a pycnometer, was 0.9896 at 15° C.; the viscosity is equal to that of castor oil, and solidification ensued on cooling to 6° C. We were then enabled to recognize under the microscope little round and dumbbell-shaped bodies. The odor is peculiar, the taste sharp and perceptible in a dilution of 1:300,000—and this fact, in the absence of chemical reactions, may be well utilized for the determination of crotonoleic acid. Crotonoleic acid is miscible in every proportion with alcohol, ether, benzin, petroleum ether, and glacial acetic acid. Further, it decomposes readily, so that when exposed to the action of alcoholic as well as aqueous solutions of potassium or sodium hydrate, decomposition quickly supervenes even in cold, but more rapidly under the influence of warmth, with complete loss of activity and the development of a brown coloring matter. Decomposition can also be effected by oxide of silver and lead, less rapidly but quite uniformly. The only means of securing a sodium or potassium combination with crotonoleic acid, was to subject to the action of carbonate of sodium or carbonate of potassium an excess of crotonoleic acid in a sealed tube. The yellow-colored solution, containing for the greatest part potassium or sodium carbonate, is treated with an excess of common salt, whereupon the crotonoleate of sodium or potassium separates out. The yield was very slight, the largest not exceeding a few centigrammes from each tube, in which usually about 5 grammes of crotonoleic acid was sealed. The excess of crotonoleic acid was not decomposed. Crotonoleic acid exhibits scarcely any effect upon litmus, but a very distinct action upon phenolphthalein.

Elementary analysis of the purified crotonoleic acid yielded the following values:

	C.		H.	
Analysis I.	65.70	per cent.	9.29	per cent.
Analysis II.	64.06	"	9.26	"
Analysis III.	64.54	"	9.47	"
Average.	64.76	"	9.27	"
Estimated for $C_{10}H_{18}O_3$	64.4	"	9.1	"

The barium salt of this acid requires 10.9 per cent.; we found 10.0 per cent. A few preliminary experiments yielded lower values, inasmuch as the saponification with baryta proceeds with difficulty. At all events the analyses show that also *the crotonoleic acid belongs in the series of ricinoleic acid.* The determination of molecular volume yielded the value 599, whereas the above formula leads us to expect 186. The molecule is obviously just three times as large as is given in our formula. Such a polymerization is not unthinkable, and would explain as inevitable the ready decomposibility of the crotonoleic acid. In the oxidation of crotonoleic acid with potassium permanganate, sebacic and oxalic acids were obtained.

On distilling the crude crotonoleic acid of the market, *a very characteristic substance, with the odor of croton oil, passes over into the distillate.* This substance is enormously potent in producing local irritations—in such degree that the persons present during the distillation become ill with symptoms of facial inflammation and swelling. This fact was established in our laboratory, as well as in the factory of E. Merck. This unfortunately very decomposible substance exhibits an enormous toxicity when given to animals. The symptoms supervening upon injection of crotonoleic acid into animals, harmonize, according to Siegel's experiments, with those which Hirschheydt described. *The fatal dose of the preparation when crotonoleate of sodium is directly ingested into the blood, equals* $\frac{38}{100}$ *milligramme per kilogramme of animal* (*cat*). The crotonoleic acid, therefore, belongs in the class of toxic substances. In a special series of experiments, Siegel showed that this power extends to frog-larvæ, tæniæ, ascarides, and earthworms.

IV. On Radix Jatrophæ Macrorrhizæ, Benth.

It was found that we could extract the active principle from the ground root with the aid of alcohol and also of boiling water; this principle can *certainly, therefore, not be a toxalbumin. It is a powerful cathartic,* and causes inflammation of the intestinal canal when given in larger doses. This inflammation supervenes even when the active substance is introduced into the blood by intravenous injection. In such case, however, autopsy reveals the ecchymoses in various organs, and swelling of the mesenteric lymph glands.

More detailed reports on the nature of the active principle are to be made in the future.

The firm of Parke, Davis & Co. supplied us with a large part of the drug required for the foregoing investigation, and I extend to them my sincerest thanks.

BOTANY AND MATERIA MEDICA.

NOTES ON SOME MEDICINAL AND ESSENTIAL OILS.

BY P. L. SIMMONDS, F. L. S.

(*Concluded from May, 1892.*)

Plum-kernel Oil.—A fixed oil from the seeds of *Prunus domestica*, tasting like oil of bitter almonds; transparent, of a brownish-yellow color; soon turning rancid, but much used in Wurtemburg for lighting purposes. Yield, 33 per cent.; density, 0.912.

Polang Oil.—A fixed oil obtained from the white kernels of *Rottlera tinctoria*, Roxb. Known also as Capala oil. It is a cathartic oil; is also used for burning, and for adulterating other oils.

Poon-seed Oil.—A thick, fragrant, dark-green, fixed oil, obtained in India from the seeds of *Calophyllum inophyllum*, Lin, which yield about one-third of their weight in oil. It is chiefly used for burning, for soap, for mixing paints, as a cure for the itch and rheumatism, and as a liniment for pains of the joints and for bruises. Density, 0.93 to 0.94. It is sometimes called Tamanu oil. *C. tomentosum* yields an oil in Ceylon; and *C. Walkerii*, Wight, and *C. Wightianum*, Wallich, or *C. apitalum*, Willd., yield lamp oils.

Poongay Oil.—A reddish-brown, fixed, thick oil, obtained from the seeds of *Pongamia glabra*, Vent. (*Dalbergia arborea*, Willd.), used for burning and also in cutaneous diseases, and especially in veterinary practice. It is also known as kurriers' oil. It is fluid at temperatures above 60° F., but below that it becomes solid.

Poorana Oil.—A medicinal oil from *Sarcostigma Kleenii*, W. & A., which is considered useful in rheumatism.

Poplar Oil.—A volatile oil obtained from the leaf-buds of the scented poplar (*Populus nigra*) and other species. It is colorless, lighter than water, of a pleasant balsamic odor.

Poppy-seed Oil.—A bland oil obtained by expression from the seeds of *Papaver somniferum*, Lin. These seeds yield from 30 to 45 per cent. of a clear, limpid, golden-yellow oil. It is used in India for culinary purposes, for burning, and as a demulcent medicine. Its flavor when pure resembles that of olive oil. The trade in poppy seed from India is a large but fluctuating one, ranging from 500,000 to 700,000 cwt. annually. The largest shipments are made to France, Belgium, and Germany. The density of this oil is 0.913 to 0.924. It dries in the air more readily than linseed oil, and does not turn rancid easily.

Portia-nut Oil.—A deep-red, thickish oil from the seed of *Thespesia populnea*, Correa. Used medicinally; said to be good for cutaneous diseases, especially itch, herpes, etc.

An oil is obtained from the seeds of *Prinsepia utilis*, Royle, in Ghureval, India.

Prostanthera Oil.—A volatile oil obtained by distillation from the leaves of *P. Lasianthos*, Lab., and *P. rotundifolia*, R. Br. The oil of the first-named is yellow, of mint-like odor and taste; density, 0.912. The oil of the latter is darker; density, 0.941.

Protium javanicum, Burm. An aromatic essential oil, like turpentine, is obtained from the peel of this fruit, called Tangoclong in the Sunda and Molucca Isles.

Pulga 'Oil.—A name for the oil of the seeds of *Curcas purgans*, which in France are called Pulghera seeds.

Pumpkin Oil.—The seeds of all the Cucurbitæ yield oil. Those of the pompion (*C. maxima*, Duchesne) yield an oil suitable for food; those of *Cucurbita Pepo*, a clear, bland, pale-yellow, thick oil, inodorous and tasteless, that dries slowly and has a density of 0.923.

The seeds of *Luffa ægyptiaca* and *L. acutangula* are emetic and cathartic. Those of the bottle gourd (*Lagenaria vulgaris*) yield a light yellow-colored oil.

Pyrethrum Oil.—A volatile oil obtained from the flowering herb of *Pyrethrum Parthenium*, Smith.

Ravenala madagascarensis, Sonner. An essential oil is obtained from the aril surrounding the seed.

Red-Cedar Oil.—A volatile oil obtained from the wood of the pencil cedar, *Juniperus virginiana*.

Rhodium Oil.—An oil from the stem of *Convolvulus scoparius*, Lin., of the Canary Islands. It is used to adulterate otto of roses, and medicinally in ointment. See also Rosewood.

Ritah Oil.—A medicinal oil obtained in India from the aril of the soap nut.

Rosemary Oil.—An essential oil obtained from the leaves and flowers of *Rosmarinus officinalis*, by aqueous distillation. Yield, ¾ to 1 per cent.; colorless or yellowish; somewhat camphor-like; density, 0.890 to 0.900.

Rosemary Oil, Wild.—A volatile oil obtained by distillation from *Sedum palustre*, Lin. It consists chiefly of a hydrocarbon and an oxygenized oil.

Rose Oil.—An odoriferous oil obtained by aqueous distillation of the flowers of various species of rose, chiefly *R. centifolia*, Lin., *R. Damascena*, Miller, *R. moschata*, Miller, and *R. indica*, Lin. It is largely made in Roumania, in the Punjab and northwest provinces of India, in Tunis, Algeria, and the south of France. In the last-named district about thirty million pounds of various roses are annually gathered for oil-distillation, fetching about *2s. 2d.* per lb. Rose oil consists of a hydrocarbon stearoptin, which is the fragrant principle. Density, 0.87 at 18°. Oil of roses should congeal at 80° F.

The Turkish oil, as it is termed, is the one commonly found in the European market. The town of Kezanlik, on the southern slope of the Balkans, is the central field of cultivation of roses in Europe, and there are in that province 128 different villages, all the inhabitants of which are engaged in the culture of roses. The process of extracting rose oil is very primitive. The appliances consist of a convex copper boiler, narrowed at the top to a neck, surmounted with a headpiece fitting into the neck, from which a straight condensing tube passes through a vat or tub of cold water into a receiver. The boiler is not large, and may contain about 240 lbs. of water. The principle consists in the distillation of water into which a proportionate quantity of roses has been put, generally about 25 lbs., the boiler being three-fourths filled with water. The steam engendered carries along with it volatilized particles of the flowers, and condenses itself in the tube. The result of this process is a troubled or murky water, which constitutes what is known by the name of "rose-water." The same process is carried on until a quantity of distillate equal in weight to the mass of roses in the boiler is obtained. The fire is then extinguished, and the boiler, being movable, is emptied of the residue. The same operation is gone over again with a fresh quantity of flowers. So far, only rose-water is produced. In order to extract the essence, this water is subjected to further distillation, and by this double process the fluid is more condensed; this time a yellowish liquid is perceived floating on the surface of the water, which is the attar or essential oil of roses; this is collected by means of a funnel-shaped spoon, provided with a small aperture to allow the free passage of the water but not the oil.

The yield of the rose crop varies greatly, but it may be stated that on an average it requires about 3,000 lbs. of flowers to produce an ounce of otto.

It may be stated that in round numbers the pure attar, at 30*s.* an ounce, realizes in Roumania an income of over £80,000 per annum. The cultivation of the rose is very scattered, the produce is not carried on on a large scale anywhere, and the extraction is in the hands of the rural population. Every owner of a rose field possesses an alembic, and is at the same time both a grower and a manufacturer.

Rose Bay Oil.—A thick, scarlet-colored oil obtained in India from the seeds of *Wrightia antidysenterica*, Br.; in great repute for its medicinal virtues.

Rosewood Oil.—An essential oil obtained by distilling the root and stem of *Convolvulus scoparius*, Lin., and *C. floridus*, Lin. It is pale yellow, thin, lighter than water, smells of roses and cubebs, though a little rancid; has a bitter aromatic taste. Another is distilled from the wood of *Lignum aspalathem* (*?*)

Rue Oil.—A volatile oil obtained by distillation from the whole plant of *Ruta graveolens*; yield, ¼ to 1 per cent.; colorless or a light buff; has a strong and disagreeable smell and taste of the herb; density, 0.850 to 0.910. It had at one time a reputation as an antispasmodic, anthelmintic, and stimulant.

Rusa Oil.—Another name in India for ginger-grass oil, obtained by distillation from *Andropogon schœnanthus*. It has a fragrant aromatic smell, persistent, and very agreeable at first, but after a time the odor becomes unpleasant, and gives many people a feeling of sickness with headache. It is useful in chronic rheumatism and neuralgic pains, and is much used by the Turks and Arabs as a hair oil. See also Sirri.

Sagapenum Oil.—A volatile oil obtained by distilling the resin with water. It is thin, yellow, lighter than water, of a nauseous, garlic-like odor.

Sage Oil.—A volatile oil obtained by distilling the herb *Salvia officinalis;* greenish yellow; density, 0.864.

Sandalwood Oil.—A volatile oil obtained from various species of Santalum; much prized by the Mohammedans as a perfume. Nine pounds of the wood yield by distillation one ounce of oil. The best is that prepared in Europe, principally in France and England; density about 0.975. The density of the Indian kind is 0.978; of the West Australian, 0.953. The oil, being mixed with a resinous substance, separates with difficulty, and distils over only after a time, when it is collected in a series of Florentine receivers, where it separates slowly from accompanying water. It is afterwards clarified by paper-filtration. Exposed to air, it oxidizes and resinifies. Sandal oil is given in small doses on sugar, to control the cough of consumptives. The seeds also yield a thick, viscid oil which is burned in lamps.

Sandbox-seed Oil.—A fixed emetic oil expressed from the seed of *Hura crepitans*, Lin.

Sassafras Oil.—An essential oil obtained in the United States from the bruised chips and sliced root of *Sassafras officinale*, by distillation. It usually takes, according to the *Oil Reporter*, about fifty hours continuous steaming to exhaust the oil from 20,000 lbs. of chips, and the average yield is about a gallon of oil (9 lbs.) from each thousand pounds of chips. Sassafras oil has numberless uses; it is employed for scenting toilet soaps, candles, and patent medicines, for flavoring tobacco, etc., and the oil is a good counter-irritant, or liniment for sprains and bruises. Density, 1.07 to 1.085; boils between 115° and 128°.

The artificial oil of sassafras sold in America is a distillate from ordinary camphor oil.

Australian sassafras oil is obtained from the bark of *Atherosperma moschata*. One hundred pounds yield about 18½ ounces.

Savin Oil.—A volatile oil obtained by distilling the tops, branches, leaves, and galbuli of *Juniperus Sabina* with water. Colorless; density, 0.89 to 0.92. The product of oil is about ½ to 1½ per cent. American savin (*J. virginiana*) yields less oil.

Schleichera trijuga, Willd., (*Meliococca trijuga*, Juss.) yields an oil which is used for skin diseases.

Scurvy-Grass Oil.—A volatile oil obtained by distillation from various species of Cochlearia herb, viz.: *C. officinalis*, *L. Danica*, and *L. anglica*. Density, 0.942.

Serpentary Oil.—A volatile oil obtained from the root of *Aristolochia serpentaria*, Lin.

Serpolet.—An essential oil, a species of camphor oil, obtained by distillation from *Thymus Serpyllum*, Lin., used in perfumery. It is of a golden yellow color, with a pleasant odor resembling lemon and thyme, and of an aromatic, somewhat bitter taste. Density, 0.89 to 0.91.

Sesame Oil.—A fixed, bland oil obtained from the seeds of *Sesamum indicum*, Dec. This oil is probably consumed to a greater extent than any other by the natives of India, and is second only to cocoanut oil in importance as an article of eastern commerce. The oil just expressed from the seeds is available for table use, and answers all the purposes of olive oil. As its congealing point is some degrees below that of olive oil, it is even more fitted for cool climates. It is also used to anoint the body, in soap manufacture, and as a lamp oil; From 80,000 to 90,000 gallons of the oil are shipped from India annually under the name of Til or Jinjili oil, and of the oil-seed 2,000,000 to 3,000,000 cwt., chiefly to France; this yields by three pressures about 45 to 50 per cent. of a pale straw-colored sweet oil. Density, 0.919 to 0.23. The oil from black sesame seed is much darker colored, the natural color of white sesame oil being a very light greenish-yellow, varying a little in tint. The oil is known amongst the natives of Bengal as *Tiler tel*, the sesamite, or oil of sesamum.

Sesame oil is not generally used in India as an article of food. It is only in the West Burdwan district, where mustard is rare, that sesame, mohwa (*Bassia latifolia*), sargoja, and kusum (*Carthamus tinctorius*) oils are used instead. In Japan this oil is used for cooking fish, and the Egyptian ladies consider it of value for the toilet, as giving a bloom and lustre to the skin, and to preserve the beauty of the hair. It is much used in preparing medicinal oils, and is the basis of the exquisitely scented flower oils of India.

Shepherd's-Purse Oil.—A fixed oil from the seeds of *Capsella bursa-pastoris*, Mœnch. It yields a volatile oil on distillation, identical with oil of mustard.

Simbolee Oil.—A clear, transparent, fixed oil, of a rich yellow color, from the seeds of *Bergera Kœnigii* (*Murraya Kœnigii*, Spr.), used medicinally in India.

Sirri Oil.—A medicinal oil prepared from the root of *Andropogon Schoenanthus*, Lin.

Soapnut Oil.—A fixed, pale-yellow, semi-solid oil, extracted from the seeds of *Sapindus Saponaria*, Lin., and other species; valued in Indian medicine.

Spearmint Oil.—An essential oil from *Mentha viridis*, Lin.

Spicewood Oil (*Lindera Benzoin*, Blume).—All parts of this shrub possess pleasant aromatic odors, which, however, are strikingly different. The bark yields 0.43 per cent. of an oil smelling like wintergreen, sp. gr. 0.923, and boiling between 170° and 300°. The berries yield 5 per cent. of an aromatic and camphoraceous-smelling oil; sp. gr., 0.855; boiling-point, 190°–270° C. Dr. Miller obtained about 4 per cent., sp. gr. 0.850. The twigs yield 0.3 per cent. of oil, with a pleasant lavender-like odor; sp. gr., 0.888.

Spike Oil, or Aspic.—An essential oil obtained by distilling the stalks and leaves of the herb *Lavandula spica*, Lin., and other species. It smells not so pleasant as oil of lavender, has a greater density, and contains more stearoptin. Specific gravity varies from 0.890 to 0.914; should be over 0.900.

Spikenard Oil.—An essential oil distilled from the root of *Nardostachys Jatamansi*, Dec.; largely used in native perfumery in the East.

Spring-grass Oil.—A name applied to the oil from *Anthoxanthum odoratum*, Lin., which gives the agreeable odor of new hay.

Spurge Oil.—A fixed, non-drying oil, from the seeds of *Euphorbia Lathyris*, Lin., which yield about 40 per cent.; density, 0.926. The oil is employed in medicine as a purgative.

Star Anise Oil.—A volatile oil obtained by distillation from the seeds and capsules of *Illicium verum*, Hooker, which yield from 2 to 4 per cent. The Chinese sometimes use it as a medicine, as a condiment, and to give a flavor to their tea. The essential oil obtained from the pericarp is used for liquors and for flavoring spirits. The exports of the star-shaped fruit capsules from China range from 7,500 to 10,600 cwt. yearly. The oil is yellowish, of a sweetly aromatic taste and smell; density, 0.976 at 20°.

Stavesacre Oil.—Fixed and volatile oils are obtained from the seeds of *Delphinium staphysagria* and *D. consolida*, Lin.

Storax Oil (Styrol).—A volatile oil distilled from liquid storax, a balsam from the bark of *Liquidambar orientale*, Mill. Colorless, thin; has a burning taste; density, 0.924. The balsamic gum resin is known in India as Rose Maloes, and is employed in perfumery.

Sweet Fern Oil.—The dried leaves of *Myrica asplenifolia*, Endl., yield 0.08 per cent. of oil with a cinnamon-like odor. Specific gravity, 0.926 at 15° C. It becomes solid in a freezing mixture.

Sweet Flag Oil.—An essential oil obtained by distillation from the roots of *Acorus calamus*, Lin., and used by perfumers.

Taipoo Oil.—A fixed oil from the seeds of *Melia Azadarechata*, Lin., used medicinally for leprosy in India.

Tansy Oil.—A volatile oil distilled from the herb and flowers of *Tanacetum vulgare*. It is of a yellow or greenish color, thin, lighter than water; specific gravity, 0.92 to 0.95; odor bitter, camphoraceous; taste pungent and bitter.

Tanagor Oil.—An essential oil obtained from the leaves of *Artemisia dracunculus*. Specific gravity, 0.935.

Terebine.—Pure terebine is a colorless, oily liquid, having the odor of thyme oil, a specific gravity of 0.864, and a boiling-point of 156° C. Its chief peculiarity consists in its being optically inactive, while oil of turpentine, its source of manufacture, possesses a strong rotatory power. It is used medicinally in the treatment of bronchial affections and diseases of the lungs.

Thuya occidentalis. An essential oil, used in medicine, is distilled from the green parts, or leaves and branches, with water. It is colorless or greenish-yellow, of a camphoraceous taste and smell; density, 0.925.

THYME OIL.—An essential oil distilled from *Thymus serpyllum* and *T. vulgaris;* yield, ½ to ¾ per cent. It is of a red color, but yellowish when redistilled. Specific gravity, 0.867 to 0.875; some give it 0.88 to 0.90.

Marjoram oil is also known as Oil of Thyme.

TONQUIN BEAN OIL.—An essential, odoriferous oil, used in perfumery, obtained from the seeds of *Dipteryx odorata.*

Tropæolum majus, Lin. A volatile oil, of a burning taste, is obtained by distillation of the foliage with water. It is colorless, and has an aromatic odor, but is more acrid even than the oil of mustard-seed. Density, 1.014.

TUBEROSE OIL.—An essential odor obtained by *enfleurage* from *Polianthas tuberosa;* used in perfumery.

TURMERIC OIL.—A volatile oil obtained by distillation from the roots of *Curcuma longa.* It is citron-yellow, thin, of penetrating odor and hot taste.

TURPENTINE OIL.—A volatile oil, mostly obtained from the resinous exudation of coniferous trees by distillation with water. The oil, which floats on the water, is the common, limpid, essential oil called spirit of turpentine. Nearly one-fourth part of oil is obtained from crude turpentine. It is colorless, thin, of 0.850 to 0.880 density, boils at 150° to 160°, has a strong specific smell and taste. The crude turpentines are, as a rule, yellowish-white, very viscid, transparent or translucent masses, of honey-like consistence, of acid reaction, of peculiar (mostly unpleasant) odor, and generally of a burning, aromatic, bitter, disagreeable taste; they consist chiefly of resin and volatile oil.

England now imports annually upwards of 21,000 tons of oil or spirits of turpentine, chiefly from the Southern States of America, in barrels of two or three hundredweight each. The British imports of turpentine in the last four decades have been as follows:

Decade ending	Quantity.	Value.
1860	130,000 cwt.	£218,988
1870	89,178	134,027
1880	271,699	378,838
1890	424,453	644,886

The price of turpentine has fluctuated much in the last fifteen years. It was as high as 35*s.* 9*d.* a cwt. in 1882, and as low as 22*s.* in 1878, but recovered to 30*s.* 4*d.* the cwt. in 1890.

Pinus australis yields largely the American turpentine; and *P. Strobus* contributes, as does *P. rigida*, the American pitch-pine, important for its yield. *P. montana* yields much oil of turpentine. *P. Pinaster* produces largely the French turpentine; *P. Haleppensis*, Mill., a kind of Venetian turpentine; and *P. Larix* is of great importance for its yield of this kind of turpentine, which is obtained by boring holes in the tree in spring—these fill during the summer, supplying from one-half to three-quarters of a pint of turpentine. A good quantity of turpentine is obtained from *P. excelsa*, *P. Cembra*, and *P. Tæda*, also from *P. longifolia* in the Himalayas.

Unona Narum, Dun. A greenish, sweet-smelling essential oil is distilled from the roots and used medicinally. *Unona odorata* yields the Ylang oil of the perfumers. See Ylang-Ylang below.

VALERIAN OIL.—A volatile oil distilled from the rhizome and rootlets of *Valeriana officinalis*, Lin., which is thin, yellowish or pale-green in color; odor pungent; taste aromatic; density, 0.94 to 0.96.

VERBENA OIL.—An essential oil distilled from *Andropogon citratus* or *A. Schœnanthus;* also another from *Lippia citriodora*, Kunth.

Vernonia anthelmintica, Willd. An oil from this plant is used medicinally.

VETIVERT.—An essential oil distilled from the rhizome of *Andropogon muricatus*, Retz.; used in perfumery.

VIOLET.—This, and many other flowers, such as the tuberose, jasmine, cassia, jonquil, etc., contain no ethereal oil, but are used for the manufacture of pomades, from which alcoholic extracts or infusions for toilet purposes are produced. There are two processes to which these odoriferous flowers may be submitted—the cold and the hot.

The *cold* is as follows: The freshly gathered flowers are spread on a quarter-of-an-inch layer of pure lard, placed on a glass plate with a wooden frame. Forty or fifty of these frames are placed one above the other, and the flowers changed every twelve or twenty-four hours, till the lard is sufficiently perfumed, when it is packed in air-tight containers for commerce.

In the *hot* process, 20 kilos of fat and about 5 of flowers are placed in a copper container, and slowly heated, with constant stirring. After ten minutes the vessel is allowed to cool, and the same quantity of flowers added; this is repeated until the fat is sufficiently impregnated with the perfume. The hot fluid is then strained, and the remaining fatty mass submitted to hydraulic pressure.

WALLABA OIL.—A medicinal oil obtained from *Eperua falcata*, Aubl.

WINTERGREEN OIL.—A volatile oil which should be distilled from the herb *Gaultheria procumbens*, but is principally made now from the sweet birch, *Betula lenta.* Specific gravity, 1.175 to 1.180.

WORMSEED OIL.—This volatile American oil is from *Chenopodium anthelminticum*, a perennial variety of *C. ambrosioides*, Lin. It is largely prepared at Baltimore, to the extent of several thousand pounds yearly. The yield is from 1½ to 2 per cent. from the fruits. It is of a pungent and bitter taste; specific gravity, 0.92.

WORMWOOD OIL.—A volatile oil obtained from the leaves and flowers of *Artemisia caña*, Pursh., and *A. Sieberi*, Bess. Another oil is obtained from *A. absinthum*, which yields from ⅔ to 1 per cent.; specific gravity varies from 0.970 to 0.972.

Xanthium Strumarum, Lin. The seeds of this species, and of *X. indicum*, Wall., yield a medicinal oil, also much used for lighting purposes. Another species, *Xanthoxylon piperitum*, yields the Japanese pepper oil.

YLANG-YLANG OIL.—An essential oil obtained from the flowers of *Unona odorata*, Dun., by distillation. It is sometimes written "alan-gilan." The oil is highly esteemed by perfumers, having an exquisite odor, partaking of the jasmine and lilac.

ZEDOARY OIL.—A volatile oil obtained by distillation from the tubers of *Curcuma zedoaria;* pale yellow, turbid, thick, heavier than water. Has a peculiar fragrant, camphor-like smell, and a somewhat bitter camphoraceous taste.

Zieria lanceolata, R. Br. A pale-yellow volatile oil, distilled from the leaves. It has the taste and odor of rue; density, 0.950.

Zizyphus orthocanthus, Dec. An oil from the kernel is used as a perfume in Morocco.

Oils of Yteban and Tagulanay are used in the Philippines to heal wounds, but the plants from which they are produced are not defined.

In bringing this series of articles to a close, while not conveying much new information, eschewing all well known industrial oils, I have endeavored to condense what is practically useful as to medicinal and perfume oils derived from the vegetable kingdom.

ANSWERS TO CORRESPONDENTS.

W. S. (Ill.).—The plant you sent us for identification is botanically known as *Artemisia Ludoviciana*, Nutt. It belongs to a genus the Western species of which are popularly known as Mountain Sages, and the medicinal properties of them all are pretty nearly alike. They are popularly used as substitutes for quinine in the treatment of periodic fevers and as diaphoretics. The plant is quite aromatic, and probably has some value.

W. M. W. & Co. (Pa.).—The seeds which you sent us, stating that they cause in the country of their habitat (namely, the West India Islands) the hair to drop off the mane and tail of animals that eat the plant, is botanically known as *Leucæna glauca*, Benth. We are not aware that the seed, or any other part of the plant indeed, has been used medicinally, nor are we aware that it has been even experimented with; but it would be interesting to know whether, from its action on the peripheral circulation, it might not yet occupy the place of ergot for very many of the indications for which that drug is used. The plant is called the "Jumba Bean" in the Bahamas.

A. E. H. (Jamaica).—We have the sample you sent us, but it is totally unfamiliar, and, since it is not accompanied by material with which botanical identification can be made, we have to confess our inability to inform you of the name of the plant from which your sample is derived. "Majoe Bitter" is generally supposed to be derived from a species of Picramnia; and if you will send us a specimen of the flowering plant, we shall be pleased to make the identification for you. Please enclose the flowering twig or branch between cardboard for safe carriage in the mails.

G. T. N. (Cal.).—We have made extensive search among botanical works, and have come to the conclusion that the names you mention, namely, *Actipalia Rhus* and *Quercus amphibia*, have never been recorded. Although we should be very chary of suspecting fraudulent intention, still the names have somewhat the ring of the New York Bible-house clergyman's style, who supplies formulæ for consumption and other diseases *gratis*. Any one who makes application to the average druggist for such articles as are represented, or supposed to be represented, by these formulæ, will of course be unable to obtain them, and it eventually turns out that he is obliged to send $10.00 to the clergyman who is dying to present (?) the community with his swindle.

H. F. M. (La.).—The sample for which you ask identification is botanically known as *Sisyrinchium angustifolium*, Mill. The medicinal properties you speak of with regard to the plant are fully endorsed by one of its vernacular names, namely, "Physic-grass." It is also popularly known, and perhaps more commonly in this northern part of our Northern States, as "Blue-eyed Grass." It has been long and well known as a laxative and alterative tonic, but has not hitherto been placed upon the market in the form of a fluid extract or other preparation.

TREATMENT BY DRUGS.

It is noted by the *Lancet* that an outspoken belief in the efficacy of drugs in the treatment of disease is not now an uncommon thing in the medical profession. The skepticism, leading often to positive negation, of such efficacy, which prevailed for some time, has gradually given way, and treatment by drugs bids fair to assume its former importance. As an indication of this change in medical opinion, the words of the latest Fothergillian medalist are quoted. "I have been surprised," he says, "at the amount of good that has been done in affections commonly looked upon as intractable—relief, arrest, and restoration. With each successive year's experience it seems to me greater and more distinct, and to elicit more gratitude from the patients to whom it is applied."—*Pharmaceutical Journal and Transactions*, May 6, 1893.

Indian Cholagogue.

W. B.—While the composition of Osgood's Indian Cholagogue has not been made public by the makers, the following, taken from a back number of the *American Druggist*, is said to produce a preparation very similar to the original in taste, smell, and effect:

Quinine sulphate	2 drachms.
Fld. ext. leptandra	2 fluidrachms.
Fld. ext. stillingia	4 fluidounces.
Fld. ext. podophyllum	3 fluidrachms.
Oil of sassafras	10 drops.
Oil of wintergreen	10 drops.
Molasses ......sufficient to make	8 fluidounces.

Treatment of Burns.

The most painful burns are assuaged in a few moments by an application of cocainized Campho-phenique, after the following formula:

℞	Cocaine hydrochlorate	gr. v.
	Campho-phenique	℥ ss.
	Olive oil	℥ ss.

Foam for Soda-water.

K. W.—Any harmless mucilaginous matter will answer to hold the foam on soda-water. Gum arabic has been much used in the proportion of from 2 to 4 ounces to the gallon of syrup.

White of egg, well beaten, has also proved satisfactory.

Soap bark (quillaya) is sometimes used for this purpose, but it should be employed cautiously. It is regarded by some observers as poisonous, experiments made of late years seeming to confirm that view. It is certainly a mild irritant, if nothing more.

Alcohol forms a fine silky foam which quickly disappears.

Salicylic and Boric Acids as Germicides in Surgery.

The employment of salicylic acid to obviate the inconveniences and accidents in surgery and obstetrics due to the use of mercuric chloride, is unsatisfactory because of its sparing solubility. Carcarro and Cesaris propose the association of boric with salicylic acid in the following proportions:

	Parts.
Boric acid	12
Salicylic acid	6
Water	1000

This borosalicylic solution has the double advantage of being non-poisonous, and acting as a microbicide.

Hufeland's Infant Powder.

U. C.—Huflattish's powder is certainly a misnomer for the well known Hufeland's Infant Powder, which is composed of:

Powd. valerian root	2 ounces.
Powd. orris root	3 ounces.
Powd. anise seed	1 ounce.
Saffron	2 drachms.
Carbonate of magnesia	2 ounces.

It is used for flatus and colic in children.

Platt's Chlorides.

H. B. Platt, the proprietor of the above, gives the following as the composition of his preparation:

Sol. chloride potash Sol. chloride magnesia	āā...... 5 ounces.
Sol. chloride aluminium Sol. chloride calcium	āā.... 15 ounces.
Sol. chloride lead	20 ounces.
Sol. chloride zinc	40 ounces.

Mix.

Kresin, a New Antiseptic.

Kresin is the name given to an antiseptic and disinfectant said to be a solution of cresylic acid in a solution of sodium, cresoxyl-acetate. It is described (*Pharm. Central.*) as a clear, brown fluid, containing 25 per cent. of cresols; clearly miscible with water or alcohol in every proportion. Kresin is said to be much less poisonous than carbolic acid, and to exceed it in antiseptic and disinfectant power.

How to Keep Leeches.

The bottom of the vase or jar containing them should be covered with small pebbles and a sprinkling of sand. If a few stones bearing vegetation can be obtained from the bottom of a stream or pool, these are very useful to put in the jar. The water should not be entirely changed; syphon off a little, and add more fresh water. Keep jar in a temperate place.

Pyrozone.

This is a 50-per-cent. solution of hydrogen superoxide in water. It is used as a skin-bleach and in dermatological practice. When put upon the unbroken skin, the latter is quickly bleached almost to a white, and remains so for a considerable time. A second application made on the same or succeeding day is said to cause the appearance of blisters. The touching or even the movement of the skin thus treated, causes lively prickling sensations, with considerable pain and itching.

"Frosting" Glass.

L. H. G.—Lead acetate in oil is commonly used to give a frosted appearance to glass. It is applied in the same manner as any other paint. A frosted appearance may also be given by painting the glass with a hot solution of magnesium sulphate to which a solution of acacia has been added.

How to Clean Windows.

Simple as the operation may seem, there is a way to clean windows and a way not to clean them.

The following suggestions may be of use to some, as they save both time and labor.

Choose a time when the sun does not shine on the window; else it will be dry-streaked, and no amount of rubbing can prevent it.

Brush off all the dust inside and out, and clean woodwork around glass, first. Use for this, warm water and ammonia.

Do not use soap. Wipe dry with cotton cloth. Do not use linen, as it leaves lint on the glass when dry. Polish with tissue or old newspaper.

Elixir Calisaya Bark Detannated.

J. C. B.—The formula for this elixir, which you desired, is found below:

℞ Calisaya bark	24 ounces.
Curacoa orange peel (ribbons)	16 ounces.
Coriander	4 ounces.
Cardamom	1½ ounces.
Cinnamon (Ceylon)	3 ounces.
Anise	1 ounce.
Cacao	8 ounces.

Reduce to a moderately fine powder; displace with a mixture consisting of one part by measure of stronger alcohol and three parts water; obtain 2½ gallons of percolate.

Prepare from 6 pints of solution of ter-sulphate of iron, hydrated sesquioxide of iron by the formula of the Pharmacopœia; to every four parts of the sesquioxide add one part of alcohol. Then add of this, to the percolate obtained as above, sufficient to deprive it of cinchotannic acid.

Test clear liquid with tincture iron chloride for traces of tannin.

When no reaction occurs, strain mixture through muslin, and wash residue with sufficient of a mixture of one part stronger alcohol and three of water to make 5 gallons; flavor as desired.

Dressing for Tan-Colored Shoes.

The following is recommended by the *Sud-Deutsche Apotheker Zeitung:*

	Parts.
Oil of turpentine	20
Yellow wax	9
Soap (ordinary bar)	1
Boiling water	20

Dissolve the wax in the turpentine by the aid of the water-bath, and the soap in the hot water. Mix in a hot mortar, and agitate until cold.

Another formula consists of simply vaselin and yellow wax melted together in the proportion of three parts of vaselin to one part of wax. A splendid dressing for russet-leather goods is the following, taken from the *Apotheker Zeitung* some years ago:

	Parts.
Palm oil	16
Common soap	48
Oleic acid	32
Glycerin	10
Tannic acid	1

Melt the soap and palm oil together with a very gentle heat. When the soap is dissolved, add the oleic acid. Dissolve the tannin in the glycerin, add to the hot mixture, and stir until cold.

A New Label Paste.

The *Moniteur Industriel* gives the following: Macerate in a small quantity of water 120 grammes of gum arabic, and in another vessel, with a similar quantity of water, 30 grammes of tragacanth. When the latter is thoroughly swollen, rub it up until it makes a homogenous magma, and to this add the gum arabic. Force the mass through a linen strainer, and to the mixture add 120 c.c. glycerin and 2.50 c.c. oil of thyme, and bring the volume up to 1 liter by adding distilled water and thoroughly incorporating the whole. This preparation should be preserved in well stoppered bottles.

Corn Cure.

J. B. N.—The following formula is taken from the *Jour. de Pharm. et de Chim.:*

	Parts.
℞ Indian cannabis	1
Salicylic acid	10
Turpentine	5
Collodion	82
Acetic acid	2

Dissolve extract of Indian cannabis, salicylic acid, and turpentine, in collodion, and add acetic acid.

Eucalyptus Mouth-Wash.

℞ Saccharin	6 grains.
Salicylic acid	2 drachms.
Menthol	4 grains.
Thymol	3 grains.
Eucalyptus oil	1½ fluidrachms.
Essence of musk	1 drachm.
Rectified spirit	8 ounces.
Glycerin	1½ ounces.
Rose-water q. s. ad	12 ounces.

Shake with about two drachms of fuller's earth. Let stand for some time, filter, and color with cochineal.

Menthol and Cocaine for Toothache.

The following is a suitable formula:

Menthol	½ drachm.
Cocaine hydrochlorate	5 grains.
Comp. tinct. chloroform, B. P.	1 drachm.
Rectified spirit q. s. ad	1 ounce.

Dissolve and mix.

The quantity of cocaine may be increased if desirable.

Cherry Tooth-Paste.

Powd. orris root	℥ ij.
Powd. myrrh	℥ ss.
Powd. pumice-stone	℥ ij.
Honey	℥ iv.
Oil clove	ʒ ss.
Essence lemon	ʒ ss.
Oil rose	♏viij.
Carmine solution, q. s. to color.	

Mix the powdered orris, myrrh, and pumice thoroughly, and add the solution of carmine; then add the essential oils, and finally the honey, and form a paste.

LONDON LETTER.

A Research on Tinctures—Lobelia—An Evening with Plant Eccentricities—The Chemist's Boy and the Shop Hours Act—Woody Ipecacuanha and the Cause thereof—The Risk of Pharmacopœial Synonyms: What is "Soda-water?"—The Chemists' Exhibition.

During the past month an important investigation by Messrs. E. H. Farr and R. Wright on the solvent action of alcohol of different degrees of strength on some of the drugs used in making pharmacopœial tinctures, has been brought to a close by a paper on Tincture of Lobelia. The authors have been engaged upon the work for fully five years, having been induced to commence it by the fact that two papers read by them before the Pharmaceutical Conference in Leeds were not in complete agreement. Having arranged to prosecute the research in coöperation, a definite plan of subdivision was decided upon, each chemist having an equal share of the work.

The average alkaloidal content of the drugs examined, being a necessary factor in the investigation, was determined in each case from an analysis of twelve different specimens. Definite methods were also followed in carrying out experiments with the tinctures prepared, in assaying them, and so on; and where the two chemists obtained variant results, one of them repeated the work upon a fresh series of preparations.

American readers will not need to be reminded that the investigation did not altogether break fresh ground, since a similar research was prosecuted in the States years ago with the view of devising the best methods of producing fluid extracts with some claim to constancy and reliability. Yet, inasmuch as tinctures are at present more characteristic of English pharmacy than are fluid extracts (though a tendency to a change or evolution in this connection is very evident), the work had necessarily to be done again in order to suit the different conditions.

The drugs worked upon were aconite, belladonna, cinchona, colchicum, conium, gelsemium, green hellebore, henbane, jaborandi, lobelia, opium, and stramonium—twelve in all. The amount of work involved in the research was of course enormous, and it may be unhesitatingly characterized as one of the most important and notable which have been carried out of late years by private individuals.

With regard to the paper on Lobelia, which closes the series, the authors show that a spirit of 50-per-cent. strength is better than proof spirit—which contains about 57 per cent. by volume of alcohol—on the ground of economy, the resulting tincture being in both cases equally good. The finished product contains 2.35 per cent. of extractive and 0.038 per cent. of the alkaloid lobeline. In connection with the latter the authors remind us of the exploded view that lobeline is a volatile liquid alkaloid, its true character as an amorphous non-volatile substance free from color and odor having been first established by American investigators.

Those in authority at the head of the Pharmaceutical Society are consistently adhering to the plan recently adopted of devoting the evening meetings at the official headquarters to more or less popular lectures. The winter session was brought to a close this month (April) by a lecture on "Eccentricities of Plant Nutrition." The lecturer was Prof. Green, the professor of botany in the Society's school, and the subject was illustrated by color pictures and diagrams thrown upon the screen by the oxyhydrogen lantern. The perennially interesting subject of insectivorous plants—Drosera, Nepenthe, Sarracenia, etc.—was first dealt with, after which epiphytes and parasites were described. The question of the assimilation of free nitrogen by plants, especially by plants of the pea tribe, is much exercising the minds of physiologists just now; and as vegetable physiology is a strong point with Prof. Green, a good section of the lecture was devoted to the matter. It does not appear, however, that the investigation has been carried far beyond the point where the latest publication of Lawes and Gilbert left it. It is known that nodules containing micro-organisms are met with on the roots of leguminous plants, and it is regarded as established that free nitrogen is taken up by the agency of these micro-organisms; how or in what form this absorption is carried on is still unknown.

It is a noteworthy commentary upon the long hours of work generally devolving upon everyone associated actively with retail pharmacy in the large towns of this country, that a chemist should appear as the defendant in the first prosecution conducted under the Shop Hours Act. According to the provisions of this measure, no "young person" can be employed for a longer period than seventy-four hours, including meal-times, in one week. The chemist employed an errand boy, who, during the week ending March 11th, worked eighty-seven hours, or slightly over fourteen hours a day. It appeared, however, that the lad was kept at the shop by request of his friends, and was not expected to, and as a matter of fact did not, work during the whole time; so the magistrate imposed a nominal fine, and added that the case was not a bad one. It brings into prominence, however, the absurdly long hours during which smaller business places are kept open in these competitive times in the hope of picking up every stray customer who may remember late at night some trifling want that could have been supplied hours earlier. With fourteen or fifteen hours of work, and say only seven for sleep, a margin of two or three hours out of the twenty-four is left in which to develop the intellectual and other higher faculties! Truly the pharmacist must be impressed with a deep sense of the sacredness of his office to find it at all tolerable.

Attention has been recently directed in pharmaceutical trade circles to the deterioration, which has become increasingly evident during the past few years, in the quality of the ipecacuanha root imported from South America. The precise nature of this deterioration may be described as a "running to wood," though one must hasten to explain that no unnatural tendency of the ipecacuanha plant to develop excess of woody fibre is meant by the expression, but only that the consignments of the root which have reached this market for a few years past have contained besides the genuine root an increasing proportion of added worthless woody matter.

The causes of such a state of things are probably very complex, but a large factor is apparently to be found in the absurdly irrational scramble after the natural products of countries just "opening up," with the single view of making the most of the present and leaving the future to shift for itself. So long as the supply of good qualities of the natural product holds out, no bad effects appear; but when this stage is passed, when the natural supply fails and there is no cultivated crop in prospect, an inferior and steadily deteriorating article can alone be procured to meet the demand.

The latest edition of the Pharmacopœia initiated the plan of attaching popular synonyms to the official names of pharmacopœial preparations. Experience is showing this to be fraught with danger, at any rate under existing conditions. The mischief of the proceeding lies in the fact that the popular synonyms, like the popular speech generally, are fluid, changing, and elastic in meaning. The first evidence of the difficulty was afforded by the "Seidlitz Powder" question; under this name very little more had come to be meant than an effervescing aperient medicine consisting of two separate powders, in a white and blue paper respectively. Consequently, when the Pharmacopœia attached to the term a precise meaning, a widespread and by no means gratifying effect was produced upon retailers and purchasers of these articles everywhere. The enforced uniformity in the composition of Seidlitz powders did not by any means suit the purchaser in all places where an article of similar composition but in different proportions had made a local reputation.

The latest form of the difficulty crops up in connection with "Soda-water"—a term inserted in the Pharmacopœia as synonymous with *Liquor Sodæ Effervescens*, a preparation required to contain 30 grains of bicarbonate of soda per pint. Now it has been a generally recognized fact for years that the so-called "soda-water" of commerce is merely aërated water, totally innocent of soda. The public has not been in the least misled by this, because the omission of the soda is largely due to an impression that the regular use of "soda," even for only a short period, is lowering. Nevertheless, on the ground of the occurrence of the synonym in the Pharmacopœia, prosecutions have been instituted against retailers of "soda-water" not answering to the B. P. requirements. It cannot be supposed, of course, that the Pharmacopœia intended that the public should never drink any but medicated "soda-water;" but the case is another lucid illustration of the risks attending the too zealous adoption of the synonym system by the Pharmacopœia authorities.

An exhibition with some novel features was held during the last week of April in this city. The Chemists' Exhibition included a show of drugs, familiar and rare, patent and proprietary medicines, and improvements in those appliances generally classed as "sundries;" as a matter of fact, these latter formed as large a proportion of the show as they do of the business in these times. Chemical balances, various apparatus and reagents used in analysis, photographic apparatus and chemicals, were also displayed, while such articles as soaps and toilet articles were of course in evidence. The exhibition was chiefly interesting to the trade; and as the members are proverbially apathetic, the attendance was never very large. Was the County Council thinking of this when it let the hall for the exhibition with the apparently ironical provision that not more than five thousand persons should be in the building at one time?

BERLIN LETTER.

Away with Antipyretics!—The Treatment of Contagious Fevers with Brandy—The Physiological Action of Phloridzin—The Sugar-forming Action of the Liver—Male Fern Again: Prof. Kobert's Judgment—Jambul Extract (from the Bark) in Diabetes—The Use of "Spring Medicine"—The Effect of Heat on Morphine and Opium.

In previous letters a few notes have been given indicative of the growth which steadily goes on in the department of materia medica in which the products of synthesis are classed. These synthetical remedies have now become so familiar, not only in medical literature but in practice also, that there is something refreshing and more than usually interesting in the confession of a practical physician in a well known health resort that he has never used any antipyretic drug, not even quinine, in the treatment of fever in pneumonia, scarlatina, typhus, erysipelas, etc.

This statement, incidentally made by Dr. Otto Tross, Karlsruhe (Baden), excited the astonishment of his colleagues so far as to lead them to suggest that he was guilty of a grave "sin of omission." He therefore explained the motive of his *modus procendi* in an address before the local medical society. He discussed the nature of fever—regarding it, in the case of contagious diseases, as the result of toxines elaborated by bacilli, and on this basis concluded that the aim of the physician should be to either destroy or check the development of the microorganisms. He maintained that to give remedies against the fever as such, was merely to attack a symptom and not the disease itself.

Passing to the important question: What, then, is to be given? Dr. Tross answers that, in his opinion, the best remedy against the development of bacteria is the fever itself. The first group of bacilli entering the system set up, by the toxines they excrete, an elevation of temperature which is unfavorable to any further development, just as in the case of alcoholic fermentation the action of the ferment is eventually arrested by its own by-products.

But this remedy is a two-edged sword which Nature can use with immunity but a short time; if long persisted in, a paralyzing effect is produced upon the heart, which may be fatal. And here is the true field for medicinal aid, says the author: to support the heart and counteract the tendency to paralysis; at least, this is the indication until the enemy (the ultimate cause) can be directly attacked.

He goes on to urge that all antipyretics are more or less dangerous to the heart, and therefore increase the mischief possibly already initiated by the fever; hence, on principle, he avoids their use totally and unconditionally.

The results of this *modus procendi* in practice demonstrate, in Dr. Tross's opinion, its justness. He recalls, among others, two cases of severe pneumonia in which the heart threatened to give way, but by the vigorous use of all possible excitants the crisis was triumphantly passed. During the whole of his practice he has never had cause to regret adherence to the principle laid down.

Briefly (for the author's communication is very lengthy) his treatment consists in giving large doses of brandy (but, of course, a pure and genuine article); the higher the temperature, the larger the quantities of the spirit given. It acts as fuel for the system, and so economizes the vitality and strength of the organism which otherwise would have itself to supply the material for oxidation. At the same time he combats the heart-paralyzing action of the toxines by means of all suitable cardiac tonics, especially by camphor and then digitalis, caffeine, decoction of cinchona, etc. In such infectious diseases as are notoriously dangerous to the heart, these stimulants are given from the first. The author notes that all stimulants must not be suddenly withdrawn when the crisis is passed, but the system should be gradually weaned from their use.

A physiological research of considerable interest is reported on by M. Cremer and A. Ritter. They administered doses (varying from 15 to 45 grains once a day) of phlorizin, or phloridzin—the glucoside obtained from the root-bark of various trees belonging to the Rosaceæ—subcutaneously, at the same hour in the day, to rabbits. As known, this substance sets up a kind of artificial diabetes when given to animals, a few grains producing an excretion of as much as twenty times its weight of sugar in the urine. In Cremer and Ritter's experiments the sugar passed was estimated daily in the diluted urine by Allihn's method, and, further, the quantity of nitrogen excreted was also determined. The results indicated a notable correspondence between the curves expressing the amounts of the two excretions. Perhaps the most interesting result of the work was the discovery that, when given subcutaneously to rabbits, phloridzin appeared nearly quantitatively in the urine—a finding at variance with the observations of other physiologists who gave it per os, as intimated above.

As complementary to this note, attention may be called to the investigations of Chaveau and Kaufmann, which show that the sugar-forming action of the liver is controlled by two nerve centres (an excitant and a restrictive), and that the pancreas plays an important rôle in the work of regulation.

The perennially recurring subject, What is the true active principle of male fern ? has cropped up again. It will be remembered that the last important contribution to the question was made by Poulsson, who, from a series of experiments, formed the conclusion that amorphous filicic acid was the sole active principle of male-fern extract, while the crystalline anhydride (filicin), which separated on standing, was of no anthelmintic value, but, on the other hand, a pronounced poison.

For this reason Poulsson recommended that the extract should not be given together with fatty oils, as these dissolved and facilitated the absorption of the poisonous principle. As this opinion coincides with that of Schmiedeberg, it seemed likely not only that castor oil would no longer be prescribed with the oleo-resin, but that attempts would be made to remove the 6 to 8 per cent. of fatty oil the drug naturally contains. With the fatty oil, however, some 4 per mille of essential oil would also be extracted, and this, according to Kobert, plays an important part in the anthelmintic action of the preparation. He regards the action of male-fern extract as largely a paralyzing one, from which the parasite, unless removed by purgatives, eventually recovers.

There seems to be no sound reason for doubting the real value of jambul in diabetes, in spite of the familiar fact that equally favorable reports have not been furnished by everyone who has tried it. Such unanimity could scarcely be expected, however genuine the claims of a remedy to cure. Perhaps the principal difficulty in the way of a general employment of jambul in diabetes is the scarcity of the fruits and the difficulty of obtaining supplies of sound material. But, although the fruits have been almost exclusively used for experiment, it is recorded in medical literature that the bark is only slightly less efficient; and it was with the view of testing the truth of this statement that Dr. Vix made trials with a fluid extract prepared from jambul bark. Describing two cases in detail, the author refers to other ten in which the extract was used with the result that when the patients adhered to the dietetic prescriptions the urine could be rendered free from sugar in a few days and the general well-being considerably improved.

In no case was the use of the extract followed by disturbing by-effects, even when taken for prolonged periods in doses of nearly two ounces *pro die*. The author ordered ½ to ¾ of an ounce in 8 to 16 ounces of water or wine, to be taken several times a day, an addition of saccharin being made if desired. The preparation was best taken after meals, as occasionally slight *malaise* followed a dose taken on an empty stomach. Nearly all the patients treated with jambul presented the appearance of subjects of chronic glycosuria, without excessive diuresis, but often with symptoms of neurasthenia. Severe cases of so-called classical diabetes were rare, and under the use of jambul became quite mild. Up to the time of writing, none of the cases had ended fatally.

As a curious relic of domestic medicine must be classed the use of so-called "spring medicines," which is still a regular ceremonial among a considerable section of the public. As the coming of spring awakens new life in nature, it is a popular belief that the blood requires purifying and the system invigorating, so that various preparations of alterative herbs are made up by a species of domestic pharmacy. In this country fresh expressed juices of such plants as dandelion, species of Veronica, Achillea, Cochlearia, etc., are the favorite medicines; they are taken, fasting, in the morning, with milk or broth. The many advantages of fluid extracts over such crude concoctions are beginning to be recognized, but naturally their recognition spreads slowly here.

An interesting note by H. Hager on the influence of heat upon opium and morphine has recently appeared (*Pharm. Zeit.*, 1893, No. 32). The author points out that morphine in aqueous solution, warmed over 40° C., gradually absorbs oxygen from the air, and is converted in part into the milder or very feebly narcotic oxymorphine; at boiling heat, absorption of oxygen goes on much more rapidly. This change is of special significance in its bearing upon the preparation of sterilized solutions of alkaloids and that of the extract of opium. Evidently the higher the temperature at which the evaporation is carried on, the milder will be the physiological action of the product. Hager further suggests that for children and delicate women an opium of reduced strength (Opium mitigatum) might be made by mixing the 10–11-percent. drug with one and a half times its weight of water, heating with constant stirring in a water-bath to 35°–100° C. until the added water has evaporated; this is reduced to powder and preserved in well closed vessels protected from light.

NEW YORK LETTER.

The business of the past month in wholesale drug circles has been anything but satisfactory. Demand has been exceedingly limited, but with the exception of one or two leading articles the market has sustained itself as to prices remarkably well. Various reasons are given for this very slight demand, but they are so greatly at variance that they are hardly worth noting. The fact, nevertheless, remains very pronounced, that all wholesale dealers in drugs have been thoroughly disappointed. During the past week, matters commenced to assume a little more encouraging aspect, when the tremendous money stringency struck our market, and at once brought all ideas of speculation or large dealings to a close. It is well for business of every character that the money excitement was short-lived. Happily, it is now past. All are breathing freely, and, with money becoming more plentiful and more easily obtained, it is fair to assume that business will again resume its normal activity.

Opium has continued to decline. Reports from the place of production are still most emphatic that the yield of the present year will be greatly less than that of last year, and that great damage has been done to the plants by frost. Notwithstanding this, it has been impossible to sustain the prices as reported in my letter of last month. To-day opium can be bought at 75 cents a pound less than when my letter of April was written. Opium and quinine are the two gambling articles of the drug business. There is more speculation done in these two articles than in any others. They are articles that are easily hypothecated at the banks for money, and for that reason there is always more or less speculation in them on the part of persons who are compelled to borrow. When a money stringency strikes our market, as during the past week, such borrowers are compelled to respond to called loans. To meet such, they are compelled to sell. It is therefore clearly apparent that the condition of our money market had more to do with the decline in the price of opium than any other cause.

Morphine, however, has remained firm, and has enjoyed a very steady, heavy demand. There seems, for the present at least, no indication whatever on the part of manufacturers to reduce their prices.

Quinine.—Although outside holdings in this market are not as great as in the past, they are considerable, but they are among weak holders, many of whom were compelled to respond to the pressure of money during the past week by releasing their holdings of quinine. The effect was to drop the price again about 1 cent an ounce. There is no cause for it beyond the condition of our money market. Foreign and domestic manufacturers seem perfectly firm in their prices and terms. The consumptive demand, however, has been very limited, astonishingly so for the season of the year. It is, however, confidently expected that within the present month the normal demand will be of such character as to call largely upon stocks, with a consequent hardening of prices.

Ipecac root suffered a sudden decline during the past week in the London market, most of which, however, has been regained within the past day or two. It would therefore be quotable at about the same price as a month ago.

Insect Flowers.—Reports received a few weeks since by cable from Dalmatia are fully confirmed through the mails. The long-extended drouth has very badly affected the plants, and a very limited yield is expected this year. The demand, on the contrary, is very heavy for insect powder. Original holders in Trieste, of insect flowers, have absolutely withdrawn from the market, refusing to make sales at an advance of *7s. 6d.* per cwt. beyond the price ruling three weeks since. They will not listen to offers of any kind. It is barely possible that there is more or less of exaggeration in these reports of failure of crop; but it is apparent, nevertheless, that the price of insect powder must be materially advanced. At the low prices ranging during the past season, there can be little or no profit to raisers. For that reason, we are advised, the territory planted with these flowers has also been largely curtailed. Taking all these reports together, we are confident that from this time on, for at least a year, materially advanced prices must be expected on insect powder.

Muriate of cocaine has suffered a decline of about 40 cents per ounce on the part of manufacturers. It is difficult to give a reason for this, as there is no reason upon the surface.

Menthol.—It is quite unusual that at this season of the year this article, used so largely in neuralgic cases, advances in price. Nevertheless, during the past week a decided advance has taken place, and reports from Japan are to the effect that they have not yet reached their highest limit.

Jalap meets at present with a very limited demand. Stocks are more abundant than they were, but not in excess. The same may be said of

Mexican Sarsaparilla Root.—There being no demand at present for export, and, stocks being large, there is a desire to sell shown on the part of the principal holders.

Citric acid is steady in price, but for it there is at present a very limited demand. Druggists, however, should bear in mind that the hot season is near at hand, when this acid is very largely used. They would therefore make no mistake to lay in their stocks at the present low range of prices.

Cod-Liver Oil, Norwegian.—The catch for the season is now finished and the result definitely known. Prices abroad are hardening somewhat, and we believe that now is a good time to buy.

Spanish saffron is somewhat lower in price—owing entirely, however, to lack of demand.

Florentine Orris Root.—Stocks abroad are very small, and there seems a prospect of short supply during this present season, owing to the great drouth that has prevailed for so long over the section where this root is gathered.

New York City, May 9, 1893.

THE INTERNATIONAL PHARMACEUTICAL CONGRESS, CHICAGO, U. S., AUGUST 21, 1892.

OBJECTS, ORGANIZATION, AND PROGRAMME.

1. The International Pharmaceutical Congress called to convene in Chicago, August 21, 1893, during the progress of the World's Columbian Exposition, will be the seventh in the series of international pharmaceutical congresses, and the first held in America.

In addition to the invitation extended by the American Pharmaceutical Association to the International Pharmaceutical Congress to hold its next annual meeting in 1893 in Chicago, a proposal was also made by the World's Congress Auxiliary of the World's Columbian Exposition to the pharmacists of the world, inviting them to participate in the Columbian commemoration by a convention similar in scope to the other world's congresses to be held at the same time and place, the proceedings of which will, in part, be devoted to addresses and papers of a general and popular character, including brief reviews of the progress made since the days of Columbus. It was, however, deemed desirable that there shall be but one pharmaceutical congress held this year, and that the scope and objects of the proposed World's Congress of Pharmacists and those of the Seventh International Pharmaceutical Congress be merged, and to attain this end the World's Congress Auxiliary accordingly proposed that the programme of the International Pharmaceutical Congress at Chicago include addresses and papers of a historical nature, and afford opportunity for the presentation of such other topics of a general interest as may, in the judgment of the Committee on Arrangements, be appropriate to the occasion. This proposal having been agreed to, the International Pharmaceutical Congress will be the only world's congress of pharmacists held in Chicago during the Exposition season.

The general scope and objects of the International Pharmaceutical Congress will be to stimulate pharmaceutical progress, to discuss the status of pharmacists and promote an intelligent appreciation of the work they do, and to consider matters and measures affecting the further advancement of pharmacy and a nearer approach to international agreement in education and practice.

2. A Committee on the International Pharmaceutical

Congress has been appointed by the American Pharmaceutical Association to arrange the preliminaries. This Committee on Arrangements consists of: Oscar Oldberg, Chicago, chairman; N. Gray Bartlett, Chicago; C. Lewis Diehl, Louisville, Ky.; D. R. Dyche, Chicago; Albert E. Ebert, Chicago; C. T. P. Fennel, Cincinnati, Ohio; J. M. Good, St. Louis, Mo.; C. S. N. Hallberg, Chicago; L C. Hogan, Chicago; J. N. Hurty, Indianapolis, Ind.; J. Kochan, Denver, Col.; E. Kremers, Madison, Wis.; A. L. Metz, New Orleans, La.; Charles Mohr, Mobile, Ala.; E. L. Patch, Boston, Mass.; A. B. Prescott, Ann Arbor, Mich.; Charles Rice, New York, N. Y.; E. H. Sargent, Chicago; William Saunders, Ottawa, Can.; L. E. Sayre, Lawrence, Kan.; William M. Searby, San Francisco, Cal.; William Simon, Baltimore, Md.; William Simpson, Raleigh, N. C.; William S. Thompson, Washington, D. C.; together with Joseph P. Remington, Philadelphia, Pa., President of the American Pharmaceutical Association, and John M. Maisch, Philadelphia, Pa., Permanent Secretary of the American Pharmaceutical Association.

All who intend to participate in the Congress or to be represented or present in its meetings, and all invited guests, are requested to communicate in advance, and if possible before July 1st, their names and addresses to Oscar Oldberg, Chairman of the Committee, 2421 Dearborn street, Chicago.

All papers, reports, and communications to be read at the Congress will, as far as possible, be printed in advance, in order that copies may be distributed at the meeting. For this purpose, such papers, reports, and communications must be placed in the hands of the Permanent Secretary of the American Pharmaceutical Association, John M. Maisch, 145 N. Tenth street, Philadelphia, before July 20th. If received later, the printing in advance of the meeting cannot be promised.

3. The Congress will be constituted of delegates accredited for that purpose by the governments of the different countries, the pharmaceutical societies and examining boards, the colleges and schools of pharmacy, the pharmaceutical departments of universities, and the national pharmacopœial committees or commissions, respectively, each of which bodies will be entitled to be represented by three delegates.

4. Special invitations are extended to pharmaceutical teachers, authors, leaders in the pharmaceutical profession, and pharmacists generally, to seats in the Congress.

5. When a vote shall be taken upon any question upon which the yeas and nays shall be called, only duly accredited delegates shall be entitled to vote.

6. The officers of the Congress shall consist of a president, vice-presidents, a secretary, and three vice-secretaries. The Committee on Arrangements shall act as a nominating committee, and shall nominate the officers by ballot. The number of vice-presidents to be nominated shall be determined by the nominating committee.

7. The first session of the Congress will be opened at 9 o'clock A.M., on Monday, the 21st day of August, 1893, in the Memorial Art Palace, Chicago, in which commodious halls and accommodations have been placed at the disposal of the Congress through the courtesy of the World's Congress Auxiliary of the World's Columbian Exposition.

The Congress will be opened with appropriate ceremonies, official addresses of welcome, and a report of the Committee on Arrangements. A temporary organization will then be effected, and a committee on credentials appointed.

Following this will come the adoption of regulations for the government of the Congress and its proceedings, and the reception of official communications and invitations.

The Nominating Committee will then report the nominations for officers, after which the election of officers will follow.

8. The proceedings of the Congress will be conducted in the English language; but, when participants in discussions speak in German, French, Spanish, or Swedish, interpreters will translate these languages into English. Addresses, papers, or communications printed or published by the Congress will be published in English, German, French, and Spanish.

The publication of the proceedings will be intrusted to a special committee, to be appointed by the President of the Congress.

To defray the expenses attendant upon such publication, each member from the United States or member of the American Pharmaceutical Association who may take part in the Congress will be required to pay the sum of five dollars; no assessment to be made upon other members or visitors.

9. To facilitate the conduct of the proceedings of the Congress, the Committee on Arrangements will classify the business according to the subjects, and the Congress will for that purpose be arranged into four sections, as follows:

Section I. Historical and Ethical Pharmacy.

Section II. Pharmaceutical Education and Legislation.

Section III. Pharmacopœial Matters.

Section IV. General Section, embracing pharmaceutical questions and subjects not assignable to any of the three preceding sections.

The order of business, after the election of officers, will be in conformity with this classification.

The following subjects are proposed for papers, reports, and discussion:

SECTION I.—HISTORICAL AND ETHICAL PHARMACY.

1. The condition of pharmacy four centuries ago as contrasted with its present status.

2. The history of pharmacy and pharmaceutical institutions in the United States.

3. The ethics of the practice of pharmacy, and the mutual relations between physician and pharmacist and between pharmacists and the public.

4. The influence exerted upon the practice of pharmacy by the introduction of chemicals and other medicinal substances controlled or limited by patents, copyrights, trademarks, or other legal restrictions, but which are commonly ordered by physicians in their prescriptions.

Should such limitations as foster monopoly in the manufacture and sale of such products be removed in the interest of the public good?

5. The relations of pharmacists to public sanitation.

6. Statistics of the present number of pharmacies in proportion to population in various countries, and of imports and exports of crude drugs, medicinal chemicals, and pharmaceutical preparations during the last half-century.

SECTION II.—PHARMACEUTICAL EDUCATION AND LEGISLATION.

1. Statistics giving the number of schools or colleges of pharmacy in each country, and the total number of students pursuing pharmaceutical courses.

2. How do the education and the professional and social position of pharmacists compare with those of other professions?

3. What legislation, if any, is at present most needed for the advancement of the best interests of pharmacy?

4. To what extent is official supervision of drug stores necessary or beneficial?

SECTION III.—PHARMACOPŒIAL QUESTIONS.

1. The proper scope of a national pharmacopœia.

2. What improvements, if any, are desirable and practicable in pharmacopœial nomenclature? Is a nearer approach to international uniformity possible?

3. What would be an ideal pharmacopœia?

4. What progress has been made towards the preparation of an international pharmacopœia for potent remedies?

What action, if any, should be taken in reference to this subject?

5. Have the influence and coöperation of pharmacists increased in the work of pharmacopœial revision in the various countries? What proportion of the membership of the pharmacopœial revision committee or commission of your country consists of pharmacists?

6. Should any substance, the manufacture or sale of which is restricted by any patent, copyright, or trademark, be admitted into any national pharmacopœia? If so, under what conditions?

7. What consideration should determine the introduction into the Pharmacopœia of a new remedy, or the retention or rejection of one already in it?

SECTION IV.—GENERAL SECTION.

1. Upon what general plan can a systematic pharmaceutical nomenclature of the complex organic chemicals recently being introduced into the materia medica (such as antipyrin, etc.) be constructed?

2. In what directions may the pharmacist profitably extend his technical and professional work to render him less dependent upon the purely mercantile part of his business?

Papers upon these and other subjects which may be presented and accepted will be referred to their appropriate sections.

PAN-AMERICAN MEDICAL CONGRESS.

The First Pan-American Medical Congress will be opened under the presidency of Prof. William Pepper, M.D., LL.D., President of the University of Pennsylvania, at Washington, D. C., Sept. 5th, and will adjourn Sept. 8, 1893.

The countries officially participating in the Congress are restricted to: Argentine Republic, Bolivia, Brazil, British North America, British West Indies (including B. Honduras), Chile, Dominican Republic, Honduras (Sp.), Mexico, Nicaragua, Paraguay, Peru, Salvador, Republic of Colombia, Republic of Costa Rica, Ecuador, Guatemala, Haiti, Kingdom of Hawaii, Spanish West Indies, United States, Uruguay, Venezuela, Danish, Dutch, and French West Indies.

Distinguished representatives of the profession from other countries are expected to be present as guests and to participate in the proceedings.

The general sessions will be limited in number, one for opening and one for closing the Congress, being all that will be held unless some necessity arises for a change in this particular. This arrangement will permit members to employ all of the time in the scientific work of the sections, which are as follows:

(1) General Medicine, (2) General Surgery, (3) Military Medicine and Surgery, (4) Obstetrics, (5) Gynæcology and Abdominal Surgery, (6) Therapeutics, (7) Anatomy, (8) Physiology, (9) Diseases of Children, (10) Pathology, (11) Ophthalmology, (12) Laryngology and Rhinology, (13) Otology, (14) Dermatology and Syphilography, (15) General Hygiene and Demography, (16) Marine Hygiene and Quarantine, (17) Orthopædic Surgery, (18) Diseases of the Mind and Nervous System, (19) Oral and Dental Surgery, (20) Medical Pedagogics, (21) Medical Jurisprudence, (22) Railway Surgery.

The evenings will be devoted entirely to social features, the detailed announcements of which will be made by the Committee of Arrangements.

Membership is limited to members of the medical profession of the Western Hemisphere, including the West Indies and Hawaii, who shall either register at the meeting or shall serve the Congress in the capacity of foreign officers. No membership fee will be accepted from any member residing outside the United States. The membership fee for residents of the United States is ten dollars ($10.00). All registered members will receive a copy of the transactions. Prominent students of the allied sciences will be cordially received as guests and as contributors to the proceedings upon invitation by the executive presidents of sections. Ladies' tickets will be issued, upon application, to registered members only, and will entitle the holders to reduced fare and to admission to all entertainments. Physicians of the United States should register at once, by remitting $10 to Dr. A. M. Owen, Treasurer, Evansville, Indiana.

Papers are solicited, the hope being entertained that the programme will be largely taken up with contributions from outside the United States. Papers may be read in any language, but a copy must be furnished for publication in either Spanish, Portuguese, French, or English, and must not occupy more than twenty minutes in reading. An abstract not exceeding six hundred words must be furnished the Secretary-General in one of the above four languages, by not later than July 10th. Abstracts will then be translated by the Literary Bureau into the three remaining languages, and will be published in book form before the meeting of the Congress.

The Congress of the United States has adopted a joint resolution whereby all the governments of the Western Hemisphere have been invited by the President to send delegates to the First Pan-American Medical Congress, and has appropriated a liberal sum for the purposes of entertainment.

The reduced fare offered by all transportation companies on the occasion of the World's Columbian Exposition to be held in Chicago, will be open to all persons attending the Pan-American Medical Congress. The Committee of Arrangements will endeavor to secure still greater reduction to members traveling between Chicago and Washington, and an effort will be made to arrange either excursions or circular tours for those who may desire to visit the great universities of the United States. All such arrangements are open to subsequent announcement.

By arrangement with the committee at Rome, the date of the Eleventh International Medical Congress has been so appointed that those who attend the meeting of the Pan-American Medical Congress may subsequently attend the former. The Pan-American Medical Congress will adjourn on the afternoon of Sept. 8th; a steamship will sail from New York on the following day, going by the Azores and Gibraltar, and enabling the tourist to reach Rome on the morning of Sept. 20th, where the Eleventh International Congress will be opened on the afternoon of Sept. 24th. It will thus be seen at a glance, that in the period usually allotted to a summer vacation the medical tourist may spend a week at the World's Columbian Exposition, the next week at the Pan-American Medical Congress, the next week-and-a-half with delightful companions in a voyage to the Mediterranean, the next few days in witnessing the sights of Rome, and the following week at the Eleventh International Medical Congress. Special reduced rates for members and their families are given both ways on the trip to Rome, particulars of which will be furnished on application to the Secretary-General, 311 Elm street, Cincinnati, Ohio, who is also a member of the American Committee of the Eleventh International Congress.

The best possible arrangements will be made with the excellent hotels with which the National Capital is abundantly supplied. The Committee of Arrangements will do its utmost to secure desirable rates and locations for members and their families. The headquarters of the Committee of Arrangements is at the Arlington Hotel, where communications may be addressed either to Dr. Samuel S. Adams, Chairman, or Dr. J. R. Wellington, Secretary.

Copies of the Official Announcement of the Congress, containing the regulations and the names of all officers and committeemen of the General Congress and of the various sections, and residing in the various countries, may be obtained upon application to the Secretary-General or to any member of the International Executive Committee.

By the EXECUTIVE COMMITTEE.
CHARLES A. L. REED, *Secretary-General.*
311 Elm St., Cincinnati, O., April 2, 1893.

FOUR YEARS OF STUDENT LIFE IN EUROPE.

[Specially reported for the BULLETIN OF PHARMACY.]

At a recent meeting of the New York Society of Apothecaries, an interesting paper, bearing the above title, was read by one of the members. The lecturer (W'r Lodian), a native of Hartford, studied in various European schools, and has some unique experiences to relate. Following is the paper:

⁂

The Paris Exposition I saw from start to finish. After the show was over, I decided to remain in Paris for a time. Probably no American knows better the gay capital than I do. I studied at its principal schools and libraries, month after month. One of the advantages of student life in Paris is that the majority of the institutions are open till 10 o'clock every night.

The time flew by quickly. There is always something to see at Paris, and the years pass easily. My stay there had lasted nearly two years. With the exception of visiting several suburban towns, I had quitted Paris but once—that was in the early fall of 1890, to pay a visit to the eastern departments of France, enter Switzerland, see the beauties of the bordering Rhine, and the principal lakes of central Helvetia.

The second winter in Paris was passed agreeably. Life in Paris during the winter is almost as pleasant as in summer.

The best schools for pharmacists to attend at Paris are the École Pharmaceutique and the École de Médicin.

In February, 1891, wishing to see the historic carnival of Nice, I dropped my studies at Paris for a week, and cut away south to Marseilles and along the French Riviera to the ancient Nizza. Monaco and Monte Carlo being but half-an-hour by railroad beyond Nice, a first visit was paid to the notorious and great gambling dive. My very first night at Monte Carlo was passed in the military prison. This is how it happened: Arriving at near midnight, all the hotels were found to be full. I walked about until 2 A.M., ringing at hotels, but in vain. Then I reported to the police officer up in old Monaco. He was most obliging, but could do nothing better for me at that hour than invite me to use the couch in the next room. This was, as he explained, nothing but the *prison militaire*. The barred windows and heavily mailed door did not belie him. The big door was closed on me with a boom, vibrating the edifice, and I heard the heavy bolts run forward into their locking-sockets. Safe at last! Being very tired, I slept like a top till morning. Then, all particulars about me were entered (February 7th).

Returning *viâ* Nice to Marseilles in the early hours of Sunday (I had spent half-a-day in this great port on the previous Friday), I boarded an ocean liner and cut across the gulf to Barcelona, twenty hours' steaming. Second visit to Iberia (having passed nearly five months on the peninsula in '88). Rough passage over. Have done some 24,000 miles of ocean-traveling in my time, and never been seasick yet. But on this occasion, down below was so close that I was nearly "that way." So I stayed on deck all night. I doubled myself up into the upper story of an empty hen-coop, lying on the handle of the open umbrella which prevented the beating rain entering. Curious to relate, I slept pretty well in this uncomfortable position.

Two days at Barcelona, making work or preparations for approaching extensive studies in España. Returned by coast line to south of France, and effected just in time a junction with the Marseilles-Paris special. Was back in Paris precisely a week after leaving it, having accomplished the round trip of some 2,000 miles (of which part by water, and deducting 3½ days taken up by staying at Marseilles, Nice, Monaco, and Barcelona) in little over eighty hours—numerous minor stoppages included.

Studies recontinued at Paris. I worked fairly constantly. I knew that a change was coming. Some said I studied too much. I got right-down seedy in health. Medical advice: Go for a long walk. Fortnight's preparations. Paying a quarter's rent in advance for my room at Avenue de l'Opera 21, I set out from Paris March 31st, 8 A.M., on a walk right through France and into Spain. Barcelona, the fine sunny city of Hispania, was to be my destination. There I was to study—law. I walked *viâ* Limoges, Toulouse (*cité de lumière*); scaled —always alone—the solitary sierra nevadas of the mighty Pyrenees, without seeing a solitary person on the lonely French-Iberian great snow-blocked range; visited the ancient and curious little Republic of Andorra; and in due course entered Barcelona. I am the first American, I believe, to have ever visited the Andorra Republic, of hoary antiquity. A descriptive article on the little democracy, from my pen, will appear in the next number of *Goldthwaite's Geographical Magazine*, New York.

I was thirty-six days over that (by the circuitous route followed) 800-mile tramp—reaching the capital of Catalonia on May 6th. Every meter of the long journey was absolutely covered on foot—not a yard by other means. Excessive rest was taken—no less that eight days being used up seeing towns passed through, and objects of interest *en route*. That brings the actual number of walking days down to twenty-eight.

Did the walk do me any good? Yes. I arrived at Barcelona stouter, sun-tanned, and "strong as a bull." I am a strict temperance man, and did not taste stimulants once, nor did I touch meat of any kind during the entire journey, although not a vegetarian. Milk I drank by the quart, and lived on bread, fruit, and vegetables.

Pharmacists in rural Spain I found to be on the verge of poverty. Nearly all the purchases are 1-cents.

Studies in law occupied much of my time at Barcelona during this third visit to the land of the Cid. I conducted my own case against a Spanish family for breach of contract. From civil it led to criminal and State cases, and it cost me all I knew to grasp the difficulties and keep level-headed. I won two of the cases, but it turned out the defending party could pay nothing, so both sides were losers. In the charge of criminal libel, in which I was defendant, my speech for the defense, of studied brevity, created a sensation. It was printed separately, and is now a State document, used as a text-defense in the law schools of the country. During this action I buried myself into the past life of, and hunted down and exposed, the infamous Guíu band of souteneurs of Barcelona. Guíu was one of the staff of the *ayuntamiento* (municipality), and the entire town was scandalized. As to the State trial, that was abandoned by the *fiscal público* (public prosecutor) soon after the initial stage had been reached, for the simple and very good reason that I showed him I knew more than he did, and that he had made a mistake.

But, while it has been said that circumstances alter cases, I found that cases did not alter my circumstances. Funds were getting low, so I slipped into journalism "between the acts," and wrote down most all the professions in Spain, casting ridicule and discredit and sarcasm upon everybody and everything. This work paid, though not well, and editors asked for more copy; but I found it made enemies and got me into hot water.

I began to tire of Spain. It was November, and I had been in the Dago land six months. I decided to quit law, and thought an Amalgamated Press position at Monte Carlo for the next few months would suit me better. So I wrote to my old friend C——, at Associated headquarters, asking for an appointment, and of course got it "per return."

Pharmacists in Spain (I may state before leaving the subject of Iberia) periodically advertise their stores by inviting the local press to a feast. As the Spanish journalist is always open to line his stomach, appealing to him for a free puff *viâ* his paunch is found to be very effective.

Back I was to Monte Carlo within a week. There I stayed for five months, in a quiet apartment looking directly down over olive and orange groves to the fine botanical gardens, the casino, and the intensely blue Mediterranean. It was a fine sight. In my writings, I did all I could to break the back—(not the bank, as I never wasted a red cent over the tables, although in the casino every night)—of the huge Monte Carlo fraud, and am solaced to know that my effusions have not been in vain.

Hours of labor with the natives in the Mediterranean semi-republic are very varying, and are always very long. From eleven, twelve, to fifteen hours during the long days, and about ten when the days are short—such is the general run. No eight-hour movement will ever take root among them. On the other hand, they do not work hard, so they are not killed by the long working-day. Yet eight hours of hard, brisk toil is undeniably better than a dozen of lagging, slow-coach methods. As to piece-work, that is quite unknown among the petty democracy, who have retained their customs from the mediæval ages as to the manner of remunerating for services rendered. But payment by piece is a good thing, when managed strictly in accordance with the regulations of trade unions. The system wakes people up, puts them on their metal, makes them swift and practical, distinguishes the useful employé from the one not so; and, as to the excuse that skimpiness of work results therefrom, it should be remembered that if men skimp their duty they lose their reputation—and perhaps their position. But the simple Monaco folk understand none of this.

Prices are of paramount import to the consequential little Monaco business man and his reduced patronage circle, but concern nobody else. The exceptions are rare where marked prices prevail, the general rule being to keep plain figures out of sight, and get from purchasers what one can. It is a case of asking a customer what he will give—not of stating what is wanted by the seller. Though the Monacogs may not be able to see it, they should be reminded that plainly-marked prices in figures, if including only a fair profit, are always honest, and they have nothing to fear from making them public. A man who buys anything at a plainly-put high figure will, although he may regard the price as firm, have a feeling of respect for the place where the purchase was made, and will go there again, because he knows clearly beforehand what he must expect to pay. But the man who pays a high sum, which he did not anticipate, in a concern where marked and visible prices are absent, and finds out later that he could have bought cheaper somewhere else—does he go to the same "do" house again? No!

In selling, the natives have the same disagreeable habit (in their ignorance, stupidly blind to their own interests) as Paris tradesmen. No matter at what shop-window or store of goods you may be looking, the proprietor or his assistant will bounce out or sidle up and try to force you to buy something—anything, big or small. His persistency is offensive, but he is too short-sighted to see it. The best way to treat these gentry is to walk right away immediately they begin pestering.

Visits to Grasse (the great perfumery-producing district), Cannes, Nice, Menton, etc., were numerous. Two visits were paid to Italy. I went to Genoa, Milan, the Italian lakes, and Torino. In this city I paid a representative visit of sympathy (not as a mere vulgar interviewer) to the aged Hungarian patriot Kossuth. He continues well and hearty in his ninety-first year, reads and writes without spectacles, is not deaf, enjoys smoking, still takes his daily walks, and speaks "United States" better than the average American. He received me well, and we chatted together for nearly two hours (June 11, 1892).

Entered France again *viâ* Mont Cenis; stayed at Aix-les-Bains; Geneva; a month in Switzerland; ascended Mont Blanc July 8th; Lyon; Vichy; and Paris again. I had told the *concierge* (janitor) I should be away six weeks. I was absent sixteen months, always maintaining two—sometimes three—domiciles. I returned to America in February, after close on four years' absence.

W. L.

IRON CITY DRUGGISTS.

There seems to be a depression in the retail drug trade in Pittsburgh at the present time, and there is no immediate indication that business will pick up as the season advances. The retailers are at a loss to give an explanation for this most discouraging condition of affairs. Some of them lay the blame on the weather. Others say the stagnation in the drug trade is due to the fact that the health condition of the city is better this spring than it has been for the same period for several years. The physicians are practically having a vacation. In fact, many of them are now out of the city, taking pleasure trips to various points. This unusual healthy state, it is claimed, is due to the thorough renovation the city received last September when the dreaded cholera invaded New York and created such a scare throughout the country.

"If the weather would only brighten up, we might do a little business with the soda-fountain if we didn't sell any drugs," said James Kerr, Jr., proprietor of the popular little pharmacy at the corner of Sixth avenue and Smithfield street. "You see, it is too cold. People don't care for soda or cooling draughts on a chilly day. A little sunshine would bring them around, but I'm afraid we are not going to get it right away. This season is very much like the period previous to the Johnstown flood. I know, of course, we had some very wet weather at that time. The prescription business is doing fairly well, but is not as brisk as usual; in fact, it has been a little backward for several months. The trade in sundries is what we are after, though, and it is in this particular that business is dull. The depression, however, seems to be general all over the country, so I suppose Pittsburgh druggists are faring as well as those of our sister cities."

On the other hand, the wholesalers are looking quite cheerful. They say that, although business is not very brisk, it is as good as they can expect at this season.

⁂

A movement of the law-and-order type is being agitated among the druggists of Sharpsburg, one of the thriving suburbs of this city. The proprietors of four of the leading retail drug houses are discussing the advisability of closing their establishments on Sunday, and it is likely that they will come to an agreement to that effect. They will also try to induce the Etna druggists to join with them in Sunday observance.

Mr. Keil, the originator of the movement, says: "Our legitimate trade on Sunday is our farmer customers, and could just as easily be done during the week. It is just a habit among the farmers to put such matters off until Sunday, and we might as well break them of it. The original scheme was to have one store open, but we failed to agree, and finally concluded that all should close up."

⁂

A piece of poisoned cake caused the death of Willie Sauter, a five-year-old boy residing at West Liberty, a suburb of this city; and the father and mother and three other children narrowly escaped the same fate. On Friday, April 28th, Adolph Sauter, who keeps a dairy, started out to get a wagon-load of slops on the South Side. At the house of Mrs. Lackner he found two or three sponge cakes which had been thrown out. The cakes looked fresh, and Sauter wrapped them in paper and took them home to his family. Each member of the family tasted the cakes, and half an hour later all were in convulsions. The boy died about an hour afterward, the physicians being unable to relieve him at all. The cake was afterwards thrown in the yard, and a dog and several chickens died after eating it.

A specimen of the cake was given to F. L. Urben, the druggist, who made an analysis of it. He also analyzed the baking powder used by Mrs. Lackner in baking the cake, and found that it contained 75 per cent. of arsenic and that there was no soda in the powder. Mrs. Lackner said the powder was manufactured by the Banner Baking Powder Company. Henry H. Vance, the president of that company, said it was sheer nonsense to suppose that they would use arsenic in the manufacture of baking powder. He said there were no leavening properties in arsenic. Mr. Vance believes that "rough on rats" had been inadvertently placed in the baking-powder can by some member of the Lackner household, and that Mrs. Lackner was not aware of it.

The affair has created much comment among druggists and chemists. One chemist says he thinks the cakes were colored with chrome yellow instead of with the yolks of eggs. Chrome yellow is really chromate of lead, and is a deadly poison.

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The Joint Committee on Water Supply of the Chamber of Commerce and the Allegheny Medical Society has issued the following circular:

> Typhoid fever is always prevalent in our community, and now the threatened invasion of Asiatic cholera renders the present period a very conspicuous one in the sanitary history of the American people. In view of this fact it is an urgent and imperative duty of the people to protect themselves. It is earnestly recommended that competent boards of health be organized in every city, borough, and community, and that such boards shall at once use all means to prevent all infringements against sanitary conditions, and to at once place themselves in correspondence with the Secretary of the State Board of Health, from whom they can receive proper advice and directions, and with any of the undersigned members of the Water Commission of Western Pennsylvania.
>
> There are many defects in the prevailing conditions which admit of great improvement and which should receive immediate correction:
>
> *First:* All garbage, night soil, and offal should be collected and destroyed by fire at public expense.
>
> *Second:* All waters used for drinking should be boiled. Only such filters should be used as admit of frequent cleansing; but after filtering, boiling should not be neglected.
>
> *Third:* The attention of members of all boards of health, burgesses, and officers in authority, is called to all springs and wells; they are frequent sources of prevailing sickness. The waters of all these should be examined by some competent authority from time to time. Until they have been proved to be free from pollution and liability to infection they must not be used.

The circular also advises the use of burning sulphur for disinfecting polluted premises, and a solution of carbolic acid for saturating bedding and clothing of the sick.

IMPORTS OF DRUGS, ETC., AT THE PORT OF NEW YORK, FOR THE MONTH OF APRIL, 1893.

Arsenic, 3,211 casks, 362 kegs, 296 bbls.; red arsenic, 125 casks.

Aloes, 159 cases, 65 boxes, 6 bbls.

Alum, 90 bags, 44 casks, 10 bbls.

Asafœtida, 56 cases.

Acid, 25 kegs, 2 bbls.; acetic acid, 3 casks.

Acid phosphate, 64 demijohns.

Althea, 3 bales.

Anise-seed oil, 5 cases.

Alkali, 10 bbls , 4 cases.

Albumin, 100 cases, 25 casks; egg albumin, 2 cases; blood albumin, 60 cases.

Apothecary's wares, 7 cases.

Aërated water, 599 bbls., 30 cases, 14 half-bbls., 7 half-cases.

Anilin, 1 bbl.; anilin salt, 459 cases, 239 casks, 126 bbls.; anilin oil, 24 drums, 10 casks.

Anilin dye and alizarin, 120 packages.

Alizarin, 147 casks, 56 bbls., 9 cases.

Aqua vitæ, 4 hhds.

Antimony salt, 10 casks.

Ammonia, sulphate, 4,225 bags; sal ammoniac, 500 bags, 142 casks; muriate of ammonia, 90 casks.

Ammonia tubes, 20.

Aluminium sulphate, 86 casks.

Borax, 2,565 sacks.

Balsam of Tolu, 17 cases, 12 boxes.

Boracic acid, 47 casks.

Burdock wood, 10 bales.

Buchu, 20 bales; buchu leaves, 37 bales, 6 cases.

Bark, 146 bales, 25 packages, 5 bbls.

Balsam of copaiba, 6 boxes.

Barium chloride, 76 casks.

Chemicals, 1,756 casks, 703 cases, 265 packages, 81 drums, 2 carboys, 497 bbls.; chemicals and colors, 10 casks; chemical products, 30 casks.

Chemical balances, 15 boxes.

Camphor, 348 packages, 152 cases.

Cod-liver oil, 201 cases, 157 casks.

Castor seed, 6,260 bags; castor oil, 850 cases.

Calamus, 5 bales.

Citrate of lime, 50 casks, 25 cases; chloride of lime, 20 casks.

Capsicum, 1 bale.

Chamomile flowers, 10 bales.

Coriander seed, 100 bags.

Coca elixir, 1 case.

Cubebs, 10 bags.

Colocynth, 10 cases; colocynth apples, 9 boxes.

Cuttlefish bones, 60 packages, 17 straps.

Cacao butter, 72 bales, 321 bags, 78 cases.

Citrate of magnesia, 50 cases.

Crystal carbonate, 420 bbls., 140 casks,

Carbolic acid, solid, 102 casks, 40 drums, 40 cases; liquid carbolic acid, 25 casks.

Cassia, 1,000 mats, 903 packages, 35 boxes, 6 baskets, 2 cases; broken cassia, 300 bales; cassia oil, 20 cases.

Drugs, 211 cases, 398 packages, 26 bales, 33 bags.

Druggists' sundries, 8 packages.

Dragon's-blood, 2 cases.

Dandelion, 25 bales.

Digitalis, 6 bags, 4 bales.

Dried blood, 2,383 bags.

Essential oil, 458 packages, 137 cases, 120 boxes.

Eucalyptus oil, 3 cases.

Fuller's earth, 10,858 bags.

Flower water, 100 packages.

Fish sounds, 45 bags, 35 packages; fish bones, 4 cases.

Glycerin, 399 drums, 368 casks, 21 packages, 13 cases.

Gum benzoin, 15 casks.

Galls, 160 bags; gall extract, 15 bbls.

Gallnuts, 13 bags.

Hamburg tea, 64 cases.

Herbs, 163 bales, 9 packages, 4 cases; herbs and seeds, 200 bales.

Hellebore root, 3 bales.

Haarlem oil, 2 cases.

Insect powder, 52 bbls, 5 cases.

Ipecacuanha, 10 bales.

Iodine, 82 bbls.

Insect flowers, 51 bales.

Jalap, 43 bales, 10 bags, 14 sacks.

Lavender flowers, 10 bales.

Leeches, 4 packages.

Liquorice, 50 cases, 10 bundles; liquorice root, 17,376 bales; liquorice paste, 50 cases; liquorice wood, 12 bales.

Laurel leaves, 55 bales.

Leaves, 98 bags, 10 bales, 1 case.

Medicines, 11 cases, 2 boxes.

Malt extract, 2,006 cases, 23 casks.

Magnesia, 181 cases.

Milk powder, 680 packages, 125 cases.

Milk sugar, 12 cases.

Nux vomica, 722 boxes, 268 bags.

Natrium, 105 casks.

Nitrate of strontia, 10 casks.

Opium, 181 cases.

Oxalic acid, 110 casks.

Orris root, 126 bags, 3 casks.

Orange-flower water, 20 packages.

Perfumery, 304 packages, 219 cases, 2 boxes.

Potash, 180 casks, 83 drums, 43 bbls. and drums, 50 cylinders, 15 bbls.; chlorate of potash, 1,865 kegs, 100 packages, 40 casks, 24 cases; bichromate of potash, 66 casks; muriate of potash, 11,394 bags; 2,000 bbls.; sulphate of potash, 7,090 bags; prussiate of potash, 237 casks; bicarbonate of potash, 1 bbl.; potash crystals, 25 packages.

Purgative, 23 bales, 10 packages.

Phosphoric acid, 54 demijohns.

Quinine, 234 cases.

Roots, 401 bales, 59 cases, 7 bags, 5 packages, 1 basket, 7 seroons; roots and herbs, 37 packages, 10 sacks.

Rape seed, 100 bags, 1 case; rapeseed oil, 120 casks, 390 bbls.

Rose-water, 33 cases.

Soda, 1,140 bbls., 3 casks, 19 cases; bicarbonate of soda, 100 casks; chlorate of soda, 340 kegs; prussiate of soda, 15 bbls.; nitrate of soda, 65,420 bags, 9,960 boxes, 27 casks; bichromate of soda, 113 casks; sal soda, 139 casks, 300 kegs.

Sponges, 1,874 bales, 563 cases, 55 packages; sponge waste, 9 bales; sponge clippings, 1 bale; refuse sponge, 27 bales.

Safflower, 10 bales.

Senna, 134 bales, 71 bags, 22 cases.

Salts of soda and lime, 13 packages.

Stramonium, 5 bales.

Sarsaparilla, 210 bales, 13 bundles, 1 box.

Soluble food, 5 cases.

Sulphate of lime, 17 casks.

Tartar, 768 casks, 343 sacks, 100 cases.

Toluidin, 11 drums.

Triticum repens, 160 bags, 84 bales.

Tinctorial extract, 252 cases, 255 casks, 5 packages.

Valeriana, 5 bales.

Wintergreen oil, 5 chests.

Manual of Chemistry. A Guide to Lectures and Laboratory work for Beginners in Chemistry. A Text-book, specially adapted for Students of Pharmacy and Medicine. By W. Simon, Ph.D., M.D., Professor of Chemistry and Toxicology in the College of Physicians and Surgeons, Baltimore, and Professor of Chemistry in the Maryland College of Pharmacy. New (4th) edition. In one 8vo. volume of 490 pages, with 44 woodcuts and 7 colored plates illustrating 56 of the most important chemical tests. Cloth, $3.25. Philadelphia: Lea Brothers & Co. 1893.

Simon's Manual of Chemistry needs no introduction to the readers of the BULLETIN OF PHARMACY, in the review columns of which many works on chemistry have been presented to our readers.

A work which rapidly passes to its fourth edition needs no further proof of having achieved a success. Its claims to favor are obvious. Emanating from an experienced teacher of medical and pharmaceutical students, the volume is closely adapted to their needs. This is shown not only by the careful selection and clear presentation of its subject matter, but by the colored plates of reactions, which form a unique feature.

Every teacher will appreciate the saving of his own time, and the advantages accruing to the student, from a permanent and accurate standard of comparison for tests depending on colors, and frequently upon their changes.

To the practitioner, who is likely at any time to be confronted with important pathological or toxicological questions to be answered by the test-tube, the volume will be of the utmost value. Such it has proved in the past, and the author has accordingly been enabled through frequent and thorough revisions to keep his work constantly in touch with the progress of chemical science and the best methods of its presentation.

To students of chemistry, pharmacy, or medicine, the book is a clear-cut, definite path to that knowledge which no intelligent aspirant for knowledge of chemistry should be without.

Nothing has done more to advance the interests of modern medicine, pharmacy, and therapeutics, than the aid which has come from progress in chemistry.

We recommend to students and practitioners in all the arts that rest on the facts of chemistry, a careful examination of this work. Experimentation and discovery, both in the laboratory and elsewhere, will be advanced by a mastery of the lessons it contains.

The field of chemistry is full of promise for the solution of many now vexed questions of ætiology, of sanitation, and of prevention of disease. Chemistry has been fruitful in the past in wresting from nature much knowledge that has served to elevate our modern race into intellectual and physical prominence, and may yet solve many further problems for the prolongation and amelioration of human life.

Modern Homeopathy: Its Absurdities and Inconsistencies. By William W. Browning, A.B., LL.B., M.D., Brooklyn, N.Y., Lecturer upon and Demonstrator of Anatomy, Long Island College Hospital. Philadelphia: Wm. J. Dornan. 1893.

This is the essay that won the $100 prize offered by Dr. Geo. M. Gould, of Philadelphia. It covers 32 pages octavo, in type the size of that used in the BULLETIN, printed in a style that is absolutely inoffensive to the critical eye—and that is saying a good deal. As to the subject-matter of the pamphlet, it is well worth reading. Wags and wits have for three generations been playing shuttlecock with homeopathy, to the greater or less amusement of the uninitiated; and only a few weeks ago Dr. Lydston, of Chicago, furnished a highly-seasoned feast of facts and ridicule on this subject to a select audience, which so pleased them that they induced the lecturer to have it put in type. But the prize essay is of quite a different physiognomy. It goes into the history, the claims, and the status of the *similia* fellows with a painstaking accuracy, and seldom spares the time to indulge in a chuckle at the absurdities it so graphically portrays. Doubtless much could be said with at least a semblance of reason on the other side of the question, so little do we really know of the *modus operandi* of curative agents; but it must be acknowledged that it would require unusual mental acumen to detect the vital principle in the remains of homeopathy after getting through with the inquest to which Dr. Browning subjects it. The doctrine of similars, says the author, was not original with Hahnemann, having been enunciated 400 years before by Paracelsus, the king of quacks, and admitted by Hippocrates as a part of the truth 400 years B. C. Infinitesimal dilutions, the second plank in the homeopathic platform, was, says Dr. Browning, an afterthought—an adroit method of escape from the consequences of the first plank; for if opium or any other poison be given in doses sufficient to produce alarming consequences, Hahnemann himself saw that more poison of the same kind would not effect a cure; therefore he decided that the curative dose should be attenuated (that is, practically annihilated)—in this shape it would present at least no obstacle to the *vis medicatrix*, and in the event of recovery the attenuation would get the credit. As an illustration of the process of attenuation, the author suggests the following recipe:

Take a little rum—the less you take the better;
Pour it in the lakes of Wener and of Wetter.
Dip a spoonful out, mind you don't get groggy;
Pour it in the lake Winnipissiogee.
Stir the mixture well, lest it prove inferior,
Then put half a drop into Lake Superior.
Every other day, take a drop in water.
You'll be better soon—or, at least, you ought to.

The pamphlet closes by challenging the record of homeopathy for one great name in medical or biological science or as connected with any discovery of modern times.

Appendicitis and Perityphlitis. By Charles Talamon, M. D., Physician to Tenon Hospital, Paris, France. Translated by E. P. Hurd, M.D. Detroit: Geo. S. Davis. 1893.

This is one of the latest numbers of the popular Leisure Library series. It is remarkable in the territory it covers for the money. These books being sold at the uniform price of 25 and 50 cents, it is at least an occasion for wonder when a single volume comprises over 200 pages. The timeliness of the topics is another recommendation to the buyer. But the chief recommendation is that it is one of the first, if not the very first, connected treatise on the subject of appendicitis that has ever appeared. Appendicitis itself is only a recent discovery; it has proved the key to those obscure but fatal abdominal difficulties known as typhlitis and perityphlitis, which are now seen to be dependent upon the state of the appendix vermiformis. Perhaps it is not too much to hope that by the persistent practice of intestinal surgery directed to the removal of this apparently rudimentary organ, the time will come when there will be no more appendicitis because there will be no more appendix. But, seriously, while appendices continue to form a part of the normal anatomy of man, and get themselves into a state of inflammation from various causes, no wide-awake physician can afford not to know the facts that this book will impart to him.

The Medical Annual and Practitioners' Index: A Work of Reference for Medical Practitioners. Eleventh year. 1893.

Thirty-five contributors furnish the original material for this volume of the Medical Annual; other sources of supply are legion. The book exhibits the latest improvements in medical science; is well printed, amply and elegantly illustrated; its 600 pages of reading matter are compactly put together; and it sells for $2.75. The United States publisher is E. B. Treat, 5 Cooper Union, New York.

The very multiplicity of the subjects treated and authorities represented, forbids any attempt on our part to supply the reader with an adequate idea of this valuable work.

DIDN'T WANT HIM TO STARVE.

Doctor: You mustn't eat too much.
Patient: Why, I board.
Doctor: Do you? Then eat all you can.

SYMPTOMS.

The Wife: There is a prescription that the doctor left for you to-day when he called and found you out.

The Husband: How did he know what to give me?

The Wife: He said that from my appearance and symptoms he knew you were suffering from chronic dyspepsia.

A HOPELESS CASE.

Doctor: Madam, I may put your husband on his feet again, but I fear that he will never quite recover the complete use of his nerves.

Wife: Oh, dear, what has John been doing to bring on such an attack?

Doctor: He has confessed all to me. He tells me that yesterday he was rash enough to drink a cocktail that was made in a drug store.—*The Club.*

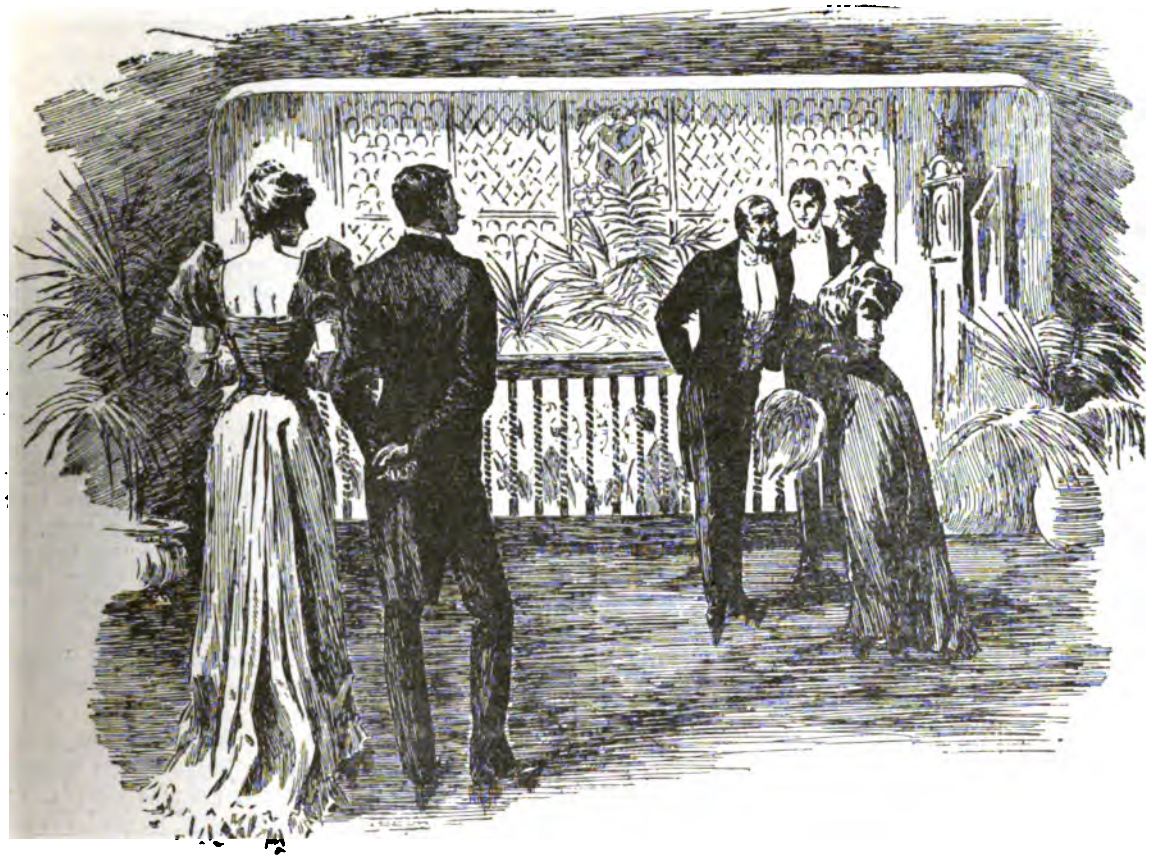
A SUBSTITUTE.

Druggist Jones can't afford to go to the theatre just now, so he holds his wife's big hat up and looks at it steadily for an hour or so once a week. He says it answers as well as going to the show, and costs nothing.

A TEST OF MERIT.

A pretty young girl was corrected one day
For tapping her foot on the floor
While an orchestra played—and the pretty girl looked
At the speaker and thought him a bore.
"I can't understand why people object;
'Tis justified, sure, on the whole.
For what earthly good is the music I hear
Unless it appeals to my sole?"

—*Boston Budget.*



A WRONG DIAGNOSIS.

She: How much one can tell from physiognomy!
He: Yes. What would you say of that old fellow over yonder?
She: Oh, he's an old soldier who has seen lots of hard service.
He: No; he's a crusty old bachelor who has made a fortune editing "*A Magazine for Mothers.*"—*Life.*

PUT A STRONG STICK IN IT.

The drug-store proprietor had employed a new boy for $3 a week. "I'll have a little stick in mine," said the man at the soda-water counter. "A little what?" asked the boy. "A little stick," repeated the man with embarrassment. "In your soda-water?" "Yes, of course." The boy prepared the mixture. The man took a swallow, gasped, gurgled, and coughed, and, when he caught his breath, said, "What in thunder did you put in that soda-water?" "Well, sir," replied the boy, "I wouldn't have done it if you hadn't insisted; but as long as you wanted it I gave you the best brand of mucilage there is in the shop."—*Washington Star.*

A MIXED PRESCRIPTION.

She had read the advertisements
In the papers o'er and o'er,
But had gotten somewhat muddled
As to what each thing was for.

So when she had a bilious turn,
She took some Pyle's Pearline;
She scrubbed the floor with Sozodont,
But could not get it clean.

And for a torpid liver
She took Sapolio,
And put Castoria in the cake:
She got them muddled so.

—Jay Kaye, in *Life.*

ABSTRACTS & TRANSLATIONS.

Adulterated Castor and Olive Oils.*

During the last six months we have had a large number of samples of castor oil and olive oil sent to us for analysis, and have been surprised to find what a small proportion of them were genuine. Out of fourteen samples of castor oil, six were genuine and eight adulterated; and from fourteen samples of olive oil, three were pure and eleven adulterated. Any sample of castor oil whose specific gravity does not fall within the limits of .956 and .966 should be viewed with grave suspicion, and if it be below .950 or above .969 the oil is almost certainly adulterated. The saponification equivalent of pure castor oil—that is, the number of grammes saponified by a liter of normal alkali—should fall between 310 and 320; and the iodine absorption, according to Hübl, falls between 84 and 84.7—our own experiments give 85. As will be seen from Table I, none of the figures contained agreed with these. With regard to the rise in temperature when mixed with an equal weight of sulphuric acid—that is, two volumes of oil to one of sulphuric acid (97 per cent.)—our figures do not agree with those recorded by other observers. Allen gives 65° C., Archbutt gives 46° C., and we have repeatedly found 72° to 74° for castor oil of undoubted purity.

TABLE I.

	Specific Gravity.	Saponification Equivalent.	Iodine Absorption.	Temperature Rise.
I......	.9735	400	67	60° C.
II.......	.9721	420	65	62° C.
III.......	.9723	400	64	63° C.
IV.......	9740	445	—	60° C.
V......	.9766	428	—	62° C.
VI.......	.9752	403	—	61° C.
VII.......	.9739	440	—	60° C.
VIII.......	.9719	440	—	62° C.

The usual adulterants of castor oil are poppy-seed, cocoanut, lard, rosin and blown oils. The figures above quoted practically exclude all but rosin and blown oils. Moreover, in every case the samples were freely soluble in glacial acetic acid, which is a further indication of the absence of other oils. Since the gravity of blown oil seldom rises above .970, and its saponification equivalent seldom exceeds 284, we were confident that rosin oil was the adulterant used. The high gravity and saponification equivalent were confirmatory of this, as was the low iodine absorption. And if our observations on pure castor oil were correct, as we certainly believe them to be, in the case of the rise in temperature, the observed rise in the case of the impure samples pointed to the presence of hydrocarbons. To absolutely confirm our suspicions we used three further tests of extreme simplicity but of great utility. A drop of the oil was placed on the back of the tongue, and in a minute nothing but the disagreeable taste of rosin oil could be detected. The samples did not appear fluorescent in bulk, but when mixed with an equal volume of ether and examined in tubes they were distinctly fluorescent. This is the usual method of observing the fluorescence of oils, but in the case of viscous oils, like castor, we have found the fluorescence much more intense when the sample without admixture with ether is allowed to run down the side of a thin glass tube and the thin layer adhering to the side is examined. Under these conditions the samples were extremely fluorescent. Finally, a few drops of each sample were dissolved in carbon bisulphide and treated with stannous bromide, with slight excess of bromine. In every case a fine coloration, from deep red to rich purple, was obtained, pure castor oil yielding little or no color. Thus every single sample was clearly proved to be adulterated with rosin oil. By adding absolute alcohol in the proportion of two parts to one of oil a large portion of rosin oil separated out, and by treatment with slaked lime most of the rosin oil combined loosely with the alkali, and the castor oil when filtered off from the lime compound had a specific gravity of .9665. By separating the rosin oil out by the addition of alcohol its specific gravity can be taken, and the percentage of rosin oil approximately calculated. However, we found that saponification of the oil with alcoholic potash, evaporating, to drive off the alcohol, and extracting the unsaponifiable matter with ether, was the most direct method of ascertaining the proportion of rosin oil, which we found to range from 35 to 40 per cent.

Before passing on to the samples of impure olive oil, it will be as well to review the results which are obtained from the genuine oil.

The specific gravity is one of the most important features in enabling one to judge of the quality of the oil to be examined. Of many genuine samples examined by us, the specific gravity at 15.5° C. (60° F.) compared with water at the same temperature never exceeded .917. In fact, we have never found so high a gravity. Low densities have been observed, but .914 is the lowest we have come across, and the sample having this density contained a considerable amount of free acid. The general adulterants of olive oil are cotton-seed, poppy-seed, arachis, sesame, rape, and hydrocarbon oils. The addition of any of these oils except rape and the lighter hydrocarbons would tend to increase the density. The saponification equivalent is not of much value in assisting us to detect the adulteration in the oils, the saponification numbers of the oils generally used for sophisticating olive oil being nearly the same as those of the pure oil. If the adulterant were a hydrocarbon oil, or one from a cruciferous plant, the test would be of great value, as in these cases the saponification equivalent would be sensibly higher than those found for pure olive oil.

The observation of the rise of temperature with sulphuric acid is a most important factor, and may be considered to be, if not the most important, one of the most valuable tests of those used to ascertain the genuineness or otherwise of the olive oil submitted for analysis. Pure olive oil, according to many observers, gives 39° to 44°; our own experiments with the pure oil gave 40° to 43°. The usual adulterants of olive oil give much higher figures than these. We found the elaidin test of little value, except, of course, in indicating that the samples were sophisticated; for identification of the adulterant our results were not such as would allow us to pass an opinion as to the oil used for mixing with the olive oil.

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* By E. J. Parry, B.Sc., and P. A. Estcourt. A.I.C., in *Chemist and Druggist*, April 8, 1893.

The behavior of the samples of oil with glacial acetic acid (E. Valenta, *Dingl. Polyt. J.*, cclii, 296; *Jour. Chem. Soc.*, xlvi, 1078) was observed. Equal parts of the oil and glacial acetic acid were mixed and gently heated, with shaking, until the oil dissolved in the acetic acid. Our observations gave for the pure samples we examined 95° C., whilst our figures for the oils suspected of not being genuine were very much lower in every case. The importance of this test can only be appreciated after long and careful trial.

We also used Hübl's iodine absorption method. For pure olive oil Hübl gives 81.6 to 84. Our own experiments gave 81.0 to 84.5 for the pure oil. The figures obtained from the oils commonly used as adulterants are much higher than this, as were the figures we obtained from our samples.

TABLE II.

	Specific Gravity.	Rise of Temperature.	Iodine Absorption.	Saponificat'n Equivalent.	Valenta.
I......	.9199	60° C.	100.0	288	68° C.
II......	.9182	60° C.	97.5	288	60° C.
III......	.9186	60° C.	93.0	286	55° C.
IV......	.9194	55° C.	98.5	293	55° C.
V......	.9190	57° C.	99.0	297	50° C.
VI......	.9187	65° C.	96.5	288	58° C.
VII......	.9187	64° C.	97.0	288	55° C.
VIII......	.9188	66° C.	96.0	290	55° C.
IX......	.9187	64° C.	97.5	290	50° C.
X......	.9188	68° C.	96.5	288	54° C.
XI.....	.9187	67° C.	97.5	289	52° C.
Pure oil...	.9170	40–43° C.	81–84.5	285–296	95° C.

We applied still another valuable test—that of the melting-point of the fatty acids, obtained after saponifying a quantity of the oil with acoholic potash, breaking up the soap with sulphuric acid, and washing free from the latter with distilled water. The fatty acids of pure olive oil obtained in this manner we found almost liquid at 23° C., whilst many of the oils before mentioned melted at as high as 35° C.

Our melting-point figures for the oils submitted for analysis were very much higher than those of pure olive, whilst they were slightly lower than those of cotton seed oil. Our general figures are embodied in Table II.

On examining these figures, we found that the specific gravity, combined with the saponification equivalent, showed the absence of a hydrocarbon oil. The difficulty was now to identify, if possible, the foreign vegetable or fat oil present. Except the saponification figures, no others agreed with those found by us of oils of known purity. Arachis oil of the poorer quality could have been used, the specific gravity of the poorer class being .920; but we examined for this oil by Renard's test, and were able to say that it was not present. In the same manner sesame oil, on account of its gravity and other general figures, might have been the adulterant, but, carefully using the color tests, we were able to dismiss it from our minds. We next turned our attention to cotton-seed oil, this oil being one used very largely for the purpose of adulterating olive oil, on account of its pleasant taste and general adaptability for eating and culinary purposes. We found that the high melting-points of the fatty acids of the samples submitted to us agreed well with that of cotton-seed oil, whilst the general color-tests and elaidin tests also confirmed our suspicions.

To further strengthen our opinion that cotton-seed was the adulterant, we carefully prepared the fatty acids of the suspected oils and dissolved them in alcohol, and then, after the addition of nitrate of silver, heated same to the temperature of boiling water. After some little time the silver was much reduced, and much blackening was observed. It may also be remarked that, on heating the fatty acid obtained after saponification for some time at the temperature of boiling water, the characteristic odor of cotton-seed oil was noticed, so that, by a review of these results, we were enabled to return every one of these samples as adulterated with cotton-seed oil.

The Synthetic Diamond.*

At the close of a recent article we made some observations on the nature of pure carbon. Inasmuch as renewed interest has been imparted to this subject by the investigations submitted by the French *savant* Moissan to the Paris Academy, we may appropriately place before our readers the more valuable data obtained since the beginning of our century respecting the eagerly sought-for, artificial production of pure crystallized carbon, or, as it has been happily termed in one periodical, the "synthesis of the diamond."

It was the famous Academia del Cimento which surprised the world in 1694 with the announcement that the diamond was consumed without residue in the focus of a concave mirror under access of air. Those people who are always eagerly hunting for jubilees will do well to recall this fact next year. Many a discovery of less significance has been celebrated. If we would fittingly estimate the importance of this discovery of the Academia del Cimento, we need simply recall the fact that Bergmann had termed the diamond "a degenerated form of mountain quartz," and that Newton had even designated it as a "form of congealed salve!"

A hundred years later Lavoisier demonstrated—being so happily situated that he could perform such experiments—that in the combustion of the diamond the sole resulting product was gaseous carbonic acid. To the great French chemist, accordingly, we owe the discovery of the nature of the diamond. In 1814 Sir Humphrey Davy was enabled to measure the volume of the carbonic acid produced by a given weight of diamond. Subsequently Dumas astonished the scientific world by the large number of diamonds burned by him. He thus succeeded in establishing the atomic weight of carbon, and in corroborating at the same time quantitatively (by control experiments) the merely qualitative labors of

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* By Dr. Otto N. Witt. Translated for BULLETIN OF PHARMACY from *Prometheus*.

Lavoisier. Young Stas, who then (1840) assisted Dumas in this work, fairly reveled in the thought that he was destroying in the interest of science the most costly substance produced by the earth! He at that time wrote to his friend Bosmans: "*Notre travail est terminé, et terminé d'une manière digne d'un roi. Croiriez-vous, mon bon ami, que nous avons fricassé du diamant déjà pour une somme de 1,200 francs?*"[*] Subsequently diamonds were repeatedly consumed, and the results of Dumas and Stas very accurately corroborated.

But even the experiments of Lavoisier had begotten the desire to produce by artificial process diamonds, of whose other self—coal—inexhaustible quantities are at our command. It was the modest professor at Kiel, Chr. Heinrich Pfaff (whose merits, by the bye, have received very scant recognition from the writers of chemical history), who made the first experiments in this direction during the second decade of our century; and thus far but the merest allusions to his labors have been made. The train of thought, however, which he followed in these investigations was at that time most remarkable. He reasoned about as follows:

If water, the combination of hydrogen and oxygen, is decomposed into its elements by the electric current, a similar phenomenon must characterize the combinations of hydrogen and carbon. The carbon will then be obtained in the purest form conceivable, presumably therefore in crystals.

Without delay Pfaff went to work, testing his deductions by experiment. To facilitate the labor of the electric current, he chose for the electrolysis a liquid possessing a maximum wealth of carbon, utilizing a saturated solution of naphthalin (then recently—1820—discovered by Garden) in oil of turpentine, through which for more than six months (as he believed) he conducted the current of Zamboni's dry pile. As there were then no means of measuring electric currents, and as no weight was then placed upon their intensity, Pfaff was unable to take into account the fundamental objection which in our day every high-school pupil would raise to his experiment—the objection, namely, that the hydrocarbons do not conduct the current, and that the current of a Zamboni pile is at all events too weak to yield chemical results of any importance. Pfaff thought he could make up in time the deficiency of strength in the current; and, in truth, after the lapse of six months, he thought he could observe the formation of very minute diamonds in the decomposing cell. But they were too small to permit more accurate investigation.

Yes, they were too small for investigation! That was then and later the rock on which were wrecked the hopes of all diamond-makers! Despretz, who claimed to have evaporated carbon in the heat of the electric arc flame, recovering it in crystal form, found a barrier in this objection. Thus the question of the artificial production of the most precious of stones remained in abeyance, until it received a new impulse in 1880. At that time the Scotch manufacturer Mactear believed he had obtained diamonds by artificial process, but they were soon found to be a silicate. But they gave occasion to Hannay, also a Scotchman, to study the subject anew. Curiously enough, his labors proceeded, unconsciously to himself, from Pfaff's train of reasoning, inasmuch as he also began his experiments with the hydrocarbons. But he sought to effect the decomposition chemically by permitting magnesium, whose thirst for hydrogen we have previously observed, to act upon hydrocarbons at very high temperatures. He thus obtained small, transparent crystals, which he even analyzed, and whose identity as diamonds is not controverted. Unfortunately other experimenters have repeated the operations of Hannay without obtaining the desired diamonds. So this investigation likewise remained fruitless.

We pass over various other experiments, which met the same fate, and come to the experiments of Moissan. His interest having been aroused by the occurrence of diamonds in meteors, Moissan sought to recrystallize the common black carbon through solution. We have only one liquid in which carbon is soluble: molten iron. But from this the carbon, on cooling, separates out in the form of graphite. Moissan deserves the credit of having shown that under certain conditions the diamond is also thus obtained. Saturating iron with carbon at the highest temperatures, he obtained, besides the graphite, small, brown, colorless crystals, whose identity as diamonds was established. He obtained a similar result when he employed molten silver instead of iron as a solvent. We will not here dwell upon the weighty conclusions on the nature of meteorites, which may be deduced from these observations. Our interest centres upon the question: What technical results may be expected from the production of diamonds thus again accomplished?

The answer is simple: At first, none at all; for Moissan's diamonds, in comparison with even the most costly natural ones, are far too expensively produced. The feminine possessors of dear-bought ornaments may sleep in peace; there is not the slightest prospect of a depreciation in value!

But Moissan's new method is certainly not the only one which leads to the desired goal. As did once the quest for the Philosopher's Stone, so also will the Diamond Problem occupy the thoughts of chemists until it is either solved or shown on weighty scientific grounds to be insoluble. And if it should be solved? If we should really succeed in producing by simple process diamonds of purest water and desired size? Then, indeed, the necklaces and diadems which are to-day the pride of wealthy heiresses would depreciate materially in value. But the true value of the diamond would assert itself for the first time. In a thousand and one uses for which the diamond is specially fitted, but for which it is still too dear, it would then be at our command, and the millions lost through the shrinkage in the value of costly ornaments would be quickly regained by the industrial arts which with the aid of the precious stone could master difficulties and problems before which they to-day stand helpless. A cluster of brilliants, moreover, would be quite as becoming to a beautiful woman, whether it cost a hundred dollars or a hundred thousand!

A Tariff Bill.

The Tariff Reform Committee of the New York Reform Club has compiled a tariff bill. This is the first bill in the field, and suggests most radical changes—

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[*] "Our labor is terminated, and terminated in a manner worthy of a king. Would you believe, my dear friend, that we have squandered diamonds amounting in value to 1,200 francs?"

whether regarded in the way of reform or otherwise will depend upon the bias or interest of the reader. Some of the principal features of the bill it may be well to specify. Crude materials to be used in the process of manufacture are in general made free of duty, under the rule that if the Government is compelled to tax manufacturers upon imported materials it is in justice bound to give them a compensating duty on competing products, and as these are to be greatly reduced and in some cases removed altogether, it follows that crude materials should be admitted free. All duties have been made strictly *ad valorem*, except only some of those which are levied as compensatory for internal revenue taxes on similar articles produced here. All foreign articles which, if made here, would be subject to internal revenue taxes, are subject to at least an equal tax, and the *ad valorem* duty imposed is in addition to a tax equivalent to that levied upon the domestic article. The committee, in their explanation of the bill, say "it would be exceedingly desirable to have no specific free list, but to make everything free which is not expressly subject to duty." This they have found impracticable, but they have placed upon the free list "all articles upon which the revenue collected is too small to pay for collection, and upon which it is not probable that any mere reduction of rates would produce substantial revenue."

This is the first tariff bill presented to the public, but it will doubtless be followed by others containing more or less radical changes from the existing law. This fairly opens the ball, and it will be kept rolling until Congress finally passes a bill in conformity with the wishes of the people, the result of the last election being regarded as an emphatic demand for tariff reform, that having been the main issue. We refrain from discussing the various changes in our lines, however radical, as this bill is not given as the final result of the Reform Club's labors, and will probably undergo considerable revision before presentation to Congress next winter, when analysis and discussion will be in order.—*Oil, Paint, and Drug Reporter*, May 15, 1893.

Pork-Packers' Pepsin War.

The methods employed by the "pork-packing" manufacturers of pepsin to extend the sale of their product has precipitated a war of prices, which has brought quotations down to an extremely low point. The conflict has been raging now for some time, but it is only within a comparatively recent period that prices have been remarkably affected. In passing it might be said that the warfare is confined exclusively to the hog-slaughterers; the other manufacturers who have no abattoir attached to their laboratories, contenting themselves with looking after their own growing business and wondering where it will end. They, the pharmaceutical manufacturers, can afford to do this because the sale of their well tested and well established medicinal brands is hardly affected at all by the very low prices quoted for the pork-packers' pepsin. There are several makers of the latter class, and each claims that his product is superior to anything else on the market. Each has undoubted facilities for producing unlimited quantities at a trifling cost, as they have no other use for the immense number of pig stomachs they turn out daily, and whatever they get for the resulting pepsin, after paying the salaries of a few workmen and salesmen, ought to be so much clear gain.

Yet the exigencies of competition are such that they are not permitted to enjoy this gain without the expenditure of much time and labor, and though they have succeeded in monopolizing the trade of the chewing-gum manufacturers, which, all told, amounts to between ten thousand and fifteen thousand pounds per year, their balance sheets would make a better showing if they had other and larger outlets. Therefore they have doubled and redoubled their exertions to secure the patronage of pharmacists and physicians. They have dropped their quotations for 100-ounce lots of pepsin, claimed to test 2,500, to about $2.00 a pound, and are doubtless prepared to make further concessions to larger buyers, or as competition may suggest.

Despite their most earnest efforts, the advantage which the command of immense capital presents, and the bait of extremely low prices, the pork-packers seem to be making but little progress against the well organized and substantially grounded competition of those manufacturing pharmacists who make of pepsin and digestive ferments a specialty, and whose goods have stood the most severe test for some time. Their chief difficulty appears to be that they seem to be unable in spite of their unlimited facilities to produce a pepsin that uniformly and satisfactorily answers as a substitute for that made by the pharmaceutical pepsin-manufacturers.

Current gossip of late says that pork packers' pepsin does not always suit the chewing-gum houses, if the result of a recent reported controversy between a chewing-gum manufacturer and one of these pork-packers may be taken as a criterion. The latter, it is said, agreed to deliver a pepsin with a test of 2,500, but analysis showed that the stock had only a digesting power of about 1,700. The chewing-gum maker, it is reported, obtained a very handsome reduction as a compromise, before the case was taken to the courts for adjustment.—*Oil, Paint, and Drug Reporter*, April 24, 1893.

The Sumach of Commerce.*

Sumach is an article of great importance to ourselves and other countries for tanning and dyeing purposes. We have sometimes received 16,000 or 17,000 tons in a year, but the average imports are now only about 12,000 tons, out of some 42,000 tons produced in Italy. It is exported both ground and unground. The unground sumach has been increasing, but the powdered fluctuates year by year. In one year, 1882, the ground reached nearly twenty-eight million kilos, but it has of averaged late years only twenty-four to twenty-five million kilos.

Our imports of sumach have been as follows at various quinquennial periods:

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*We do not know why the Board of Trade and commercial men still adhere to the spelling of *shumac;* by botanists and others it is always written *sumach*, and in most Continental countries it assimilates to this—in French, *sumac;* in German, *summach;* in Italian, *sommaco;* and in Spanish, *sumaque*.

1840	9,351 tons.	1870	14,431 tons.
1845	11,398	1875	14 686
1850	12,929	1880	11,620
1855	13,082	1885	11,157
1860	13,993	1890	11,432
1865	13,045	1891	11,648

The price of sumach has been gradually declining. It fetched £16 7*s.* 7*d.* per ton in 1877, and now stands at about £11 10*s.* per ton. The price, of course, fluctuates with supply, but these have been the extreme range.

The exports from Italy bring in from £400,000 to £500,000 a year. England takes the largest share, but it is also sent to France, Austria, the north of Europe, and the United States. It is extensively grown in the Province of Palermo, and the chief shipments are from that port.

There are two species of the shrub chiefly grown in Europe.

1. *Rhus coriaria* (Linnæus), the tanner's sumach, so named by the ancients from the bark, leaves, and all parts of the plant (owing to their astringent character) serving to tan skins. Pliny (Book XXVI, chap. 2) speaks of the employment of this shrub for tanning, and it is also mentioned by Dioscorides. This species is found growing spontaneously in dry and stony ground in the south of France, in Spain, Italy, Barbary, and Syria, but it is most extensively cultivated in Italy. The culture presents no difficulty. A gathering can be obtained from suckers in the first year; and under favorable circumstances, on a good dry soil, as much as a ton or a ton and a quarter of sumach is obtained from an acre. The expense of putting fresh land into sumach cultivation is about £10 per acre, including the cost of plants; but in subsequent years, no care being required, the gathering of the crop does not cost more than 30*s.* an acre.

The cultivation has been greatly extended in the north of Sicily, especially in districts which do not admit of irrigation, for this is a plant which requires little water, thriving well on arid soils and on mountain slopes. The neighborhood of Palermo is found to suit the plants best, as the leaves there are superior in strength to those grown on the south or eastern coasts of the island.

The foliage, after being simply dried in the sun, is then reduced to powder, in mills worked by horse power. It is very rich in tannic acid, often yielding as much as 30 per cent.

2. Another species, *Rhus cotinus*, is also a valuable tanning substance, its leaves containing up to 24 per cent. of tannin.

But little leather is tanned exclusively with sumach. It is employed rather as an addition, correcting much of the harshness and color of other things. Sumach is, however, much used in tanning the skins of sheep and goats for pale-colored leather.

Sumach grows in a wild state in the island of Cyprus, being an indigenous shrub. The quality is considered superior to the Tyrolean, but it is of inferior value in the European market; whether this is owing to an inferiority of the plant itself, to any want of cultivation, or to imperfect preparation of the leaf, it is difficult to state.

About half a hundred South African species of Rhus are known; of which, probably, some could be utilized, like the Italian sumach, but hitherto we have remained unacquainted with the nature and degree of any of their tanning and coloring principles. The root of *Rhus oxyacanthaos* or *diocia* is employed in the north of Africa to tan the skins of the gazelle.

Under the name of ridou, or ridoul, the powdered leaves of *Coriaria Myrtifolia*, which grows in the neighborhood of Montpelier, from their astringent properties are occasionally used on the Continent for tanning leather, but this substance is inferior to the powder obtained from the leaves of the Rhus.

Another Coriaria (*C. armentosa*), of New Zealand, contains 16½ per cent. of tannin.

If we pass now to American sumach, we find that there are six botanically different varieties of sumach in the States; of these, three are of value, one is of little or no value, and two are poisonous. The useful sumachs are *Rhus typhina*, *R. glabra*, and *R. copallina*. These contain from 15 to 20 per cent. of tannin, and occasionally up to 26 per cent., but experimental tests show the following average proportions:

R. glabra	14 to 16 per cent.
R. copallina	16 to 19 "
R. typhina	16 to 18 "

The leaves of American sumach must be collected early in the season, if a clear, white leather like that form Sicilian sumach is to be obtained. This can be ascertained by the color of the precipitate effected with gelatin. In an investigation made as to the best time for collecting the leaves, in order to secure the highest possible percentage of tannic acid, it was found that those collected in June yielded 22.75 per cent., those collected in July 27.38 per cent., and those collected in August 23.56 per cent. But it was ascertained subsequently that to secure a product as valuable as the Sicilian, and capable of producing white leather, the collection should be made in June. Yellow and brown coloring matters are found in the American product, which are not met with in the Italian, and these darken the leather. The average of many analyses of European sumach is from 13 to 16 per cent. of tannic acid, and in better qualities 18 per cent. The Southern States produce a large quantity. The annual consumption of sumach in the United States some years ago was estimated to be about 15,000 tons, of which 7,000 tons was of home production and spontaneous growth. They anticipate in the future sending 5,000 tons to Europe, besides supplying their home demands.

As the sumach possesses remarkable vitality and flourishes upon the poorest soil, its cultivation may, and probably will, become a profitable branch of agricultural industry in the States.

The value of the foreign sumach imported into the United States has been declining of late, owing probably to the extended use of the home-grown produce. The following figures are of imports for the financial years ending June 30th:

1884	$586,025	1888	$264,738
1885	443,161	1889	206,643
1886	488,134	1890	302,375
1887	388,624	1891	245,536

—P. L. Simmonds, F. L. S., in *Leather Trade Circular*, London.

CORYL.—The *Journ. de Pharm. d'Anvers* states that under this name a mixture of methyl chloride and ethyl chloride is being used as a local anæsthetic in dentistry and in minor surgical operations. It remains liquid at 0° C., while methyl chloride boils at −27°, and the sensation of cold produced when coryl is applied to the skin is not so intense as when methyl chloride is used.—*Pharmaceutical Journal and Transactions*, April 1, 1893.

HYDRASTIN BITARTRATE.—This new preparation of hydrastin forms white needle-shaped crystals, which are readily soluble in hot water, less readily in cold water. It is admirably adapted for the preparation of pure hydrastin. The analysis indicated the formula:

$$C_{21}H_{21}NO_6C_4H_6O_6+4H_2O.$$

—*American Druggist and Pharmaceutical Record*, April 21, 1893.

BLACK PEPSIN.—The so-called "black pepsin" of which mention was made in the *Circular* for November last, is being heard of from all parts of the country. Several government analyses recently made, show it to consist of about 83 per cent. of common salt, 2 per cent. of rennet and other organic matter, and 15 per cent. of annatto, moisture, etc. Several examinations of butter made by its aid show 63 per cent. of fat.—*Druggists' Circular*, May, 1893.

A RUSSIAN MILLIONAIRE'S BILL.—A millionaire citizen of Kieff, M. Tereschtshenko, recently had occasion to proceed to Moscow to consult a prominent medical man, Prof. Sacharin. The Professor received an honorarium of 14,000 roubles (about £1,000), and his assistant one of 2,000 roubles (£150), for his services. The medicines prescribed by Prof. Sacharin were forwarded to his patient from Kieff to Moscow by special train.—*Chemist and Druggist*, April 8, 1893.

AN EXPLOSIVE PRESCRIPTION.—It is reported in the *British and Colonial Druggist* that the following prescription proved explosive:

Iodol	0.5 gramme.
Yellow oxide of mercury	0.2 gramme.
Petrolatum	10 grammes.

On rubbing the iodol and oxide of mercury in a mortar in order to produce an intimate mixture, a loud explosion followed, which would probably have had serious results if the quantities used had been larger.

PERFUME IN ORCHIDS.—E. Mesnard has examined the flowers of orchids in a similar manner to that described in his work on other flowers (*Pharmaceutical Journal*, Jan. 7th, p. 549), and finds that they present no distinctive anatomical structures where the perfume is secreted, the essence being generally localized in the epidermal cells on the inner surface of the petals or sepals.—*Compt. Rend.*, cxvi., 526 (*Pharmaceutical Journal and Transactions*, April 1, 1893).

SCANDINAVIAN PHARMACOPŒIAS.—The new Danish Pharmacopœia, which has been three years in preparation, received the approval of the King on February 9th. The last edition appeared as long ago as 1868. The text of the new edition is in Danish, the names of the drugs, however, being given in Latin. A committee has been at work for some time on a revision of the Norwegian Pharmacopœia, and their labors are so far advanced towards completion that it is expected the new edition will appear in the course of the present year.—*Druggists' Circular*, May, 1893.

AN INCOMPATIBILITY WITH FOWLER'S SOLUTION.—Sarebbe calls attention to the following prescription:

Solution of dialyzed iron	25 grains.
Fowler's solution	4 grains.

M. Drop by drop.

After this procedure he noticed the formation of a dense precipitate upon the walls of the flask. The gelatinous product is the hydrated oxide of iron, produced from the alkali carbonate in liq. potassii arsenitis. He suggests the use of an arsenical salt solution free from alkalies.—*Bull. Chem. Pharm.*, 1893, 146.

IPOMEIN.—The root of *Ipomea pandurata* or *Convolvulus panduratus* is much used in America as a remedy for stone, and it has been found by Kromer to contain a glucoside different from those of other Convolvulaceæ. It is colorless, insoluble in ether, chloroform, or petroleum ether, readily soluble in alcohol or acetic acid. Its composition is represented by the formula $C_{78}H_{132}O_{36}$. It is converted by the action of bases into a volatile acid $C_5H_8O_2$ (probably β-methyl crotonic acid) and ipomeic acid $C_{34}H_{62}O_{18}$, a monobasic acid which is split up by acids into sugar and crystalline ipomeolic acid.—*Pharm. Zeitschr. Russland.*

DISINFECTION MIXTURES FOR CHOLERA STOOLS.—Borchow (*Pharm. Zeit. Russl.*) has made a study with 1-per-cent. sublimate solution, 6-per-cent. sulpho-carbolic acid solution, 20 per-cent. milk of lime, and a 5-per-cent. pure carbolic acid solution. The sublimate solution is only effective when brought in a confined space into intimate contact with the comma bacilli. The milk of lime is more effective, but only completely so by very thorough mixing. Sulpho-carbolic acid and carbolic acid are the most effective, even though not thoroughly mixed with the fæces. The author recommends for general use the milk of lime as the cheapest, safest, and most convenient disinfectant.—*Rund*, 1893, 286 (*American Druggist and Pharmaceutical Record*, April 21, 1893).

THE PARIS HOSPITALS.—The Superior Council of Public Assistance has decided to divide the free medical service of Paris into sections, each district to have a central hospital with a certain number of dispensaries connected with it. The house surgeons of the hospitals are to be deprived of the right of granting admission, and, except in urgent cases, the right to enter a hospital will be decided at the residence of patient. The central office now in existence is to be suppressed, and the doctors connected with it will be placed at the head of the dispensaries. Amongst other reforms, the medical men employed by the city are no longer to supply medicaments, and the municipality of Paris is to have pharmacies of its own, the organization of which will be known shortly. —*Chemist and Druggist*, April 1, 1893.

PRIZES FOR WINDOW-DESIGNS.—We have frequently expressed our views as to the value of show windows, and have printed such suggestions regarding them as have come to us, a helpful article on the subject appearing in this number.

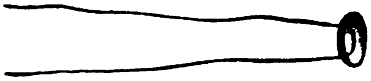
To bring out still further elaborated ideas we have decided to offer the following prizes:

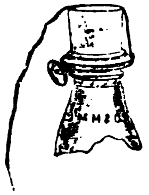
Ten dollars for the best design for dressing a pharmacist's show window, the design to be appropriate for use during July or August.

Five dollars for the best photograph of a window in actual existence.

Offerings in this competition must reach us not later than the first day of June. The awards will be made as soon as possible thereafter.—*Druggists' Circular*, May, 1893.

A NEW CORK-TYING DEVICE.—Herewith is illustrated a device just put upon the market by John M. Maris & Co., of Philadelphia and New York, for use in tying the cork in bottles of solution of citrate of magnesium.





The first cut shows the wire as it appears alone, and the second illustrates the method of its employment.

This device possesses many obvious advantages over string, and, considering the fact that it may be used several times over again, is much cheaper.—*Druggists' Circular*, May, 1893.

PHARMACY IN NUBIBUS.—The Pharmacie Languard at St. Moritz Dorf, in the Engadine, is adjacent to the Kulm Hotel, where most of the visitors are located, and is at an altitude of upwards of 6,000 feet above the sea-level. It is probably the highest pharmacy in Europe. Dr. L. Mutschler is the present proprietor, and for several years past he has kept it open all the year round. In the middle of winter there are four or five hundred visitors in St. Moritz, and although many of these are attracted to the place for a holiday of skating and tobogganing, nearly half of the sojourners have been sent there to derive benefit from the mountain air as a curative agent in the early days or threatenings of lung-troubles. Most of the popular English medicines are kept in stock, and, as photography is a favorite amusement, photographic chemicals are also in considerable request.—*Chemist and Druggist*, April 29, 1893.

PROTECTION OF PLANTS AGAINST LARVÆ.—A. Laboulbène proposes to protect beetroot and cruciferous garden plants against the attacks of larvæ by the employment of decoctions of plants containing powerful alkaloids. Unlike mineral poisons, such as Scheele's green, the alkaloids lose their poisonous properties by undergoing oxidation upon the plants or in the soil, so that after performing the required work no risk of ulterior mischief need be anticipated in adopting this method. Repeated experiments have been made with decoctions of the stems and leaves of *Delphinium grandiflorum*, as well as with the seeds of the same plant and of *D. Ajacis*. It is thought, however, that the seeds of *D. staphisagria* may be more energetic in their action, and the aconites, stramonium, belladonna, hyoscyamus, etc., are suggested as affording suitable material for experimenting in this direction.—*Comp. Rend.*, cxvi, 702.

A WRONG RIGHTED.—Under this heading the *Philadelphia Alumni Report* announces the repeal of the section in the Pennsylvania Pharmacy Act which enabled graduates in medicine to register without examination as pharmacists, whilst graduates in pharmacy were not accorded a similar privilege. The bill repealing the obnoxious clause has been signed by the Governor of the State, and henceforth all applicants for registration will be required to undergo examination. The objection raised by some, that graduates of State-chartered colleges of pharmacy should not be compelled to pass the universal examination, is disposed of with the dictum that "the competent graduate has nothing to fear in an examination, and the incompetent one should better his condition, either by working to make himself fit his occupation, or by finding an occupation which better fits him."—*Pharmaceutical Journal and Transactions*, April 29, 1893.

THE USE OF FRUITS IN THE TREATMENT OF DISEASE.—A substitute for cod-liver oil has, it is said, been found in the oil of the milk of the cocoanut. It is much used in Germany for phthisis. Barberries are very agreeable to fever patients in the form of a drink. Medlars are astringent and not very palatable. Grapes and raisins are nutritive and demulcent, and very grateful in the sick-chamber. A so-called "grape cure" has been much lauded for the treatment of congestions of the liver and stomach, enlarged spleen, scrofula, tuberculosis, etc. Nothing is allowed but water and bread and several pounds of grapes per diem. Quince seeds are demulcent and astringent; boiled in water they make an excellent soothing and sedative lotion in inflammatory disease of the eyes and eyelids. The effects of fruit-eating are hygienic rather than medicinal, but it is to be understood that discretion is to be observed in the use of fruits as well as in the use of any good thing.—*Western Druggist*, April, 1893.

THE SHAKE MIXTURE.—The unscientific affair known in pharmacy as a shake mixture has exhibited a new variety of capability for danger.

Ordinarily the mixture has a precipitate in it which the patient may be too careless or too ignorant to properly distribute when taking his dose; or from the nature of the precipitate he may be unable to effect his purpose when he does "shake." In the case in point, the difficulty arose from one liquid separating from another and carrying with it all of an active poison present, this liquid failing to be properly mixed with the other portion when the dose was poured out.

As a consequence the patient got an overdose when finishing the contents of the bottle, and serious though happily not fatal results followed.

The details of the case furnish a new argument against the use of a form of medicine which, while of possible value in a few isolated cases, is apt to prove a "mistake mixture," and is always inelegant if nothing worse.—*Druggists' Circular*, May, 1893.

A NEW PILL EXCIPIENT.—M. P. Carles objects to the use of kaolin ointment as an excipient for permanganate-of-potassium pills, on account of the uncertainty whether disintegration is completely effected in all cases. He proposes as an efficient substitute the following combination: Kaolin, 2 parts; anhydrous sodium sulphate, 1 part; water, 1 part. A mass is said to be obtained on trituration which remains plastic for six to ten minutes and sets quite hard in a quarter of an hour. It is claimed that if potassium permanganate, silver nitrate, gold chloride, or the iodides of mercury be massed with this excipient, they are preserved intact for an indefinite period, whilst the pills remain unaltered in appearance. Permanganate pills that had been thus made and kept for some months were shown, at a meeting of the Bordeaux Society of Pharmacy, to disintegrate entirely in one minute when placed in contact with water, and a quantitative determination proved that none of the salt had been reduced. The excipient also serves for use with croton oil, creasote, etc.—*Bull. Soc. Pharm. de Bordeaux*, xxxiii, 77.

THE ARTIFICIAL PRODUCTION OF DIAMONDS.—On Sunday afternoon last Prof. Moissan delivered a long-expected practical lecture on diamond-making, in the large hall of the Conservatoire of Arts and Métiers, Paris. Before an audience of 600 persons the lecturer executed the various experiments explained at the Academy of Sciences during the past three months. The results obtained created a good deal of enthusiasm amongst the audience. By a series of manipulations M. Moissan showed how M. Violle had established that great feat of electro-chemistry—viz., that the temperature of the electric arc is independent of its magnitude and always equal to about 5,000° F. He also explained that natural diamonds must have been formed by crystallization, under pressure, of carbon dissolved in iron, the greater number of diamonds burned leaving a certain quantity of iron as ashes. He concluded by saying that the scarcity of large diamonds is beneficial to mankind, as it would have been a calamity to all if the useful commodity coal had been transformed into a substance which is only the pride of the wealthy.—*Chemist and Druggist*, April 29, 1893.

THE NEW BUILDING OF THE NEW YORK COLLEGE.—The College of Pharmacy of the City of New York, which for fifteen years has occupied the little Gothic structure at 209 and 211 East Twenty-third street, known as the Morton Memorial Chapel, is, as our readers are aware, soon to have a new home. Work on the structure was begun several weeks since.

The College of Pharmacy was organized March 18, 1829. In the early days of its existence one small room in the City Hall sufficed for its needs. It subsequently had quarters at 511 Broadway, where the old St. Nicholas Hotel afterwards stood, and then in the New York Medical College building.

Between 1862 and 1878 the college occupied rooms in the University building in Washington square. In the latter year it purchased the Morton Memorial Chapel property, where it has remained until the present time.

The new structure is to stand on the north side of West Sixty-eighth street, between the Boulevard and Columbus avenue. The site is upon a narrow, elevated strip of land, lying midway between the lower portion of Central Park and the Hudson River, both of which will be in plain view from the upper stories of the building.

The new college will have a front of 75 feet, with a depth of 100, and will be five stories high. The general style will be Italian Renaissance. The front below the first-floor line will be of blue sandstone. Above this, extending up to the second-floor line, the front will be of carved bluish-gray Bedford limestone, with pillars of dove-colored Bardiglio marble supporting the portico over the entrance. The upper stories will be of light, buff-colored terra cotta, surmounted by a balustrade of Bardiglio marble pillars.

The contractors expect to have the building ready for occupancy by Oct. 1st. Its cost will be about $150,000.—*Druggists' Circular*, May, 1893.

NEW SOLUBLE FERMENT.—E. Bourquelot, having been investigating for some years the saccharine matters contained in mushrooms, has been able to show that these plants generally contain trehalose, which is formed as they commence to produce spores. This sugar is localized in the tissue of the sporophore, and gradually disappears as maturity is attained. Glucose, which also occurs in these fungi, appears simultaneously with the trehalose, but remains after the latter has disappeared (*Bulletin de la Société Mycologique de France*, ix, 60). The idea suggested itself, therefore, that the glucose might be produced from the trehalose by an analogous process to that by which saccharose is formed in certain plants by the action of a ferment. Bourquelot found that there was, in fact, a soluble ferment possessing the property of converting trehalose into glucose. This he met with first in a vegetable mould, *Aspergillus niger*, which also contains, at certain periods of its existence, comparatively large proportions of trehalose. The ferment was isolated by grinding the mould with dry sand and subsequently keeping in contact with alcohol at 95° for five or six hours. After filtering off the liquid and drying the mass, this was rubbed up with water and left to macerate some time to dissolve the ferment, again separated from the fluid, and the ferment then precipitated from this by addition of alcohol. Thus prepared, the ferment was capable of completely converting trehalose into glucose (dextrose). The ferment was shown to affect the trehalose of trehala and that of mushrooms in exactly the same way, so proving the identity of the two sugars. It differs from the invertin of yeast, the diastase of saliva, and the emulsin of almonds, in being apparently peculiar in its action on trehalose. Since it also converts maltose, experiments have been performed to show whether it might possibly be a combination of two distinct ferments, each acting upon one of the sugars. A solution was heated, and at 63° C. it was no longer capable of affecting trehalose, but the property of converting maltose was not destroyed until a temperature of 75° C. was attained. It would appear, therefore, that two distinct ferments were present in the solution—one, termed by Bourquelot *trehalase*, capable of converting trehalose, and a new one, to which the name *maltase* is given, affecting maltose.—*Comp. Rend.*, cxvi, 826.

A Bactericidal Water-Filter.—It has long been known that in times of cholera disturbance it is a useful precaution to add some harmless acid to drinking-water. This, until the outbreak last year, was regarded as a prophylactic, but bacteriologists then discovered that some acids kill cholera bacilli quickly, and this is as true of the organic acids as the mineral acids. It was for that reason that natural lemonade was so strongly recommended last summer, and in that connection we briefly reported in our issue of Dec. 31st some experiments by M. Girard, chief of the Paris Municipal Laboratory, with citric acid, which he found to completely sterilize water containing cholera bacilli. Tartaric acid, we understand, has a similar effect; and taking advantage of this fact, Dr. Hans Brackebusche has devised a filter for the sterilization of water by means of tartaric acid. It consists of two parts—an inner within an outer cylinder, the interspace being packed with small pieces of marble up to three-fourths of the total height. Into the top of the inner cylinder is fitted a perforated tray, which is divided into three for the reception of tartaric acid in large crystals. It is only when the water is very bad, as in hot and cholera-stricken countries, that all three spaces are filled with the acid. Each space, we may say, holds about two drachms of acid. On filling the inner cylinder with water it is evident that the acid will be dissolved; then, as the water ascends the outer cylinder through the marble to the outlet tap, the acid is gradually fixed by the calcium carbonate, so that when drawn off the water does not taste sensibly acid, and it is slightly charged with carbonic acid gas. Such is the method of working the filter. As to its effects on water containing cholera bacilli, we have before us a report by Professor R. Fresenius which is of a highly satisfactory nature. At different times he has added to sterilized water a broth-culture of cholera bacilli, and this he passed through the filter. One cubic centimeter samples of the water put in, and of the filtrate, were tested by plate cultures, and the results are shown in the following table. The water was infected at 11:20 A.M.:

TIME.	INFECTED WATER.	FILTRATE.
11:20 A M.–11:40 A.M.	Innumerable cholera bacilli.	No cholera bacilli, very few other bacteria.
12 noon	ditto.	ditto.
1 P.M.	ditto.	ditto.
2.30 P.M.	ditto.	ditto.
4 P.M.	ditto.	ditto.
5 P.M.	ditto.	ditto.
6 P.M.	ditto	ditto.
7 P.M.	ditto.	ditto.
9 P.M.	sterilized.	ditto.

These results were corroborated by independent experiments on two occasions, and Professor Fresenius comes to the conclusion that twenty minutes' contact in the filter suffices to render a cholera-infected water perfectly innocuous. We have not had the opportunity of personally corroborating these results, but Professor Fresenius's reputation bears great weight, and the principle of the filter is perfectly sound.—*Chemist and Druggist*, April 8, 1893.

Estimation of the Nitrogenous Constituents of Commercial Peptone.—The value of commercial peptones depends essentially on the amount of albumose and peptone they contain. Gelatin and gelatin-peptone, leucin, tyrosin, and other decomposition products are comparatively valueless. The following process is directed to the estimation of these constituents: In all cases, the amount of any precipitate is not found by weighing, but is calculated from the result of a nitrogen estimation by Kjeldahl's process, on the assumption that they all contain 16 per cent. Of dry preparations 5 grammes is taken; of fluids, 20 to 25 grammes. This is warmed with 200 c.c. of water, feebly acidified with acetic acid, boiled and filtered, the filtrate being made up to 500 c.c. The filter, with the moist precipitate, is at once submitted to Kjeldahl's process, and a correction is made for the nitrogen in the paper. This gives the amount of unchanged albuminous substances. In a well made preparation these should not be present. The nitrogen in the filtrate is also determined, and the sum of the two stated as total nitrogen. A fresh portion of substance dissolved in 25 c.c. of water (or, if a liquid, 50 c.c. concentrated to 25 c.c.), is gradually mixed with 250 c.c. of absolute alcohol, and filtered after twelve hours. The filtrate, which contains the gelatin-peptone, the leucin, tyrosin, and other decomposition products, is freed from alcohol and dissolved in water. Any insoluble matter is filtered off, and regarded as albumose. The clear solution is made up to 500 c.c., and 100 c.c. of this, warmed to about 40°, is precipitated with 10 to 15 c.c. of a paste of mercuric oxide, containing about 15 per cent., and prepared by pouring mercuric chloride into dilute soda, washing thoroughly, and preserving in the dark. After stirring for a few minutes, the mixture is filtered and the nitrogen determined in the precipitate and filtrate. The former contains the gelatin-peptone, with unknown decomposition products of albumose and peptone. The filtrate contains the leucin, tyrosin, and other products of a digestive fermentation which has been carried to excess, together with part of the so called flesh bases (creatin, etc.), which are very sparingly soluble in 95-per-cent. alcohol. Instead of mercuric oxide, phosphotungstic acid may be used. This reagent, used in excess, precipitates none of the flesh bases except xanthin and hypoxanthin, of which, from their sparing solubility, only traces can be present in the alcoholic solution.

The alcohol precipitate containing the albumose, gelatin and peptone is rinsed with water into a beaker and warmed until the alcohol is expelled. Any albumose which has been rendered insoluble is filtered off and washed with hot water. The clear solution is made up to 500 c.c., and of this, 50 c.c., mixed cold with an equal volume of dilute sulphuric acid (1 vol. to 3 vols. of water), is completely precipitated with phosphotungstic acid. The nitrogen in the precipitate gives the joint amount of the albumose, peptone, and gelatin. 100 c.c. of the same solution, concentrated on the water bath to 8 or 10 c.c., is mixed with 100 c.c. of a cold saturated solution of ammonium sulphate. The precipitate is collected and washed with a saturated solution of ammonium sulphate. It is then dissolved in tepid water, and whilst one portion of the solution is used for nitrogen estimation, another is precipitated by barium chloride, to ascertain the amount of adhering ammonium sulphate. (The relation of the ammonia to the sulphuric acid in the solution used should be determined, not calculated.) The corrected nitrogen in the precipitate gives the amount of albumose and gelatin. The peptone is known by difference, its actual presence being confirmed by concentrating the remainder of the solution, precipitating the albumose and gelatin by solid ammonium sulphate, and testing the filtrate by adding a trace of cupric sulphate and a large excess of strong soda solution. Peptone gives a characteristic red color.

The gelatin is best estimated by means of the viscosimeter, the viscosity being compared with that of a standard solution of the best white gelatin, to which an equal volume of a 20-per-cent. solution of serum peptone, free from gelatin, has been added. A 10 per-cent. solution of the substance is prepared and cooled for three hours to a temperature lower than that at which the comparison is to be made. It is then gradually warmed to a standard temperature, and immediately examined for viscosity. Very dilute solutions may be compared at 0°–1°, whilst strong ones may need to be warmed to 25°, but it is not permissible to warm above the standard temperature, and again cool just before testing. Calling the viscosity of a 10-per-cent. solution of serum peptone, 100, the addition of 0.25 per cent. of gelatin raises it to 130 at 0°–1°, 114 at 15°, 106 at 20°.

Having now ascertained the amount of nitrogen in the alcohol precipitate in the form of albumose, peptone, and gelatin, the remaining nitrogen is to be regarded as belonging to the flesh bases. The principal of these is creatin, with 32.8 per cent. of nitrogen, whence the multiplication of the nitrogen by the factor 3.12 gives the total amount of the bases with but small error.—A. Stutzer, in *American Journal of Pharmacy*, May, 1893.

THE *American Druggist* and *Pharmaceutical Record* have combined their resources and will publish a weekly number for the future.

DO NOT HESITATE, but at once apply for membership in the American Pharmaceutical Association. There is no initiation fee, and the volume of annual proceedings alone is worth much more than the price of annual dues. Blank applications and full information can be obtained by addressing the chairman of the committee, Dr. H. M. Whelpley, 2342 Albion Place, St. Louis, Mo.

THE ANTIKAMNIA BUSINESS.—At the annual meeting of the stockholders of the Antikamnia Chemical Company, of St. Louis, Mo., held April 17, 1893, the entire interests of the company were secured by Messrs. Cox and Ruf, so that the company is now a very close corporation. The officers are: Frank A. Ruf, St. Louis, President and Treasurer; John W. Cox, Boston, Secretary. Mr. Ruf remains, as heretofore, manager of the entire business of the company.

BUFFALO GRADUATES.—On the 2d inst., at Music Hall, Buffalo, N. Y., the class of '93, Department of Pharmacy, University of Buffalo, "commenced." There were 21 of them; Ralph Young being president of the class, Samuel A. Grove valedictorian, Grace E. Wilcox historian, and Homer J. Knickerbocker poet. We are not informed as to who is the originator of the elegant parchment invitations to the event, for one of which the BULLETIN tenders its acknowledgments. Success to the Buffalo boys—and girls!

A FEW MORE PHARMACISTS TO CLOSE UP THE RANKS.—The Chicago College of Pharmacy held its commencement exercises at Hooley's Theatre, Chicago, on April 13th. It had previously launched thirty-two graduating classes on the high seas of business, and this class added only forty-six enthusiastic pill-compounders to the list. The exercises were of the usual order—music, oratory, the reading of prize essays, and the conferring of the magical sheepskins. The great Northwest was the chief contributor to the class-rooms of this prosperous college for the term just closed, though even Germany and Russia were represented. The Chicago College of Pharmacy is one of the salient features of that astonishing town. Long may it flourish!

Prospects of a Revival.—The *Oil, Paint and Drug Reporter*, after interviewing a number of prominent drug firms in New York, concludes that, although the volume of business has of late been materially reduced, the causes of this depression are passing away, and there are good prospects of an early revival.

Government Appropriation for the Pan-American Medical Congress.—Early in the last session of Congress the Secretary of the Treasury and the Secretary of State jointly recommended that an item be inserted in the Sundry Civil Bill appropriating $15,000 for the entertainment of the Pan-American Medical Congress. The item was rejected by the House Committee on Ways and Means, but was reintroduced in the Conference Committee by Senator Gorman, under whose able championship it was agreed to and became a law. The medical profession will not soon forget this considerate act on the part of the Senator from Maryland.

Governmental Delegates to the Pan-American Medical Congress.—Hon. Rowland B. Mahaney, United States Minister to Ecuador, transmits information through the Department of State that Dr. Ricardo Cucalon, of Guayaquil, has been appointed one of the delegates for that country to the Pan-American Medical Congress.

The United States *Chargé d'Affaires* at Petropolis has transmitted information through the Department of State that the Government of Brazil has accepted the invitation to take part in the Congress, and has appointed Dr. J. Baptista da Lacerda, the distinguished teacher and scientist of Rio de Janeiro, one of the delegates thereto.

The Mexican Legation at Washington furnishes information that Dr. Fernando López, Surgeon-General of the Mexican Army, has been appointed one of the delegates to represent the Government of Mexico.

The O. S. P. A. Meeting.—The Ohio State Pharmaceutical Association held its annual meeting in Findlay, on April 25, 26, and 27, 1893. There were 89 in attendance, 59 of whom were new members.

Prof Virgil Coblents, of the New York College of Pharmacy, was recommended by the Association as one of the judges or examiners of the chemical products and exhibits at the World's Fair at Chicago.

The next meeting will be held at Cincinnati, O., May 4, 1894.

Delegates elected to represent the Association at the meeting of the National Wholesale Druggists' Association at Detroit in September, were: Henry W. Stecker, 1066 Pearl street, Cleveland, and Geo. B. Kauffman, of Columbus.

The following were appointed delegates to the American Pharmaceutical Association which meets in Chicago August 15th: J. C. Firmin, Findlay, O.; Fred Berg, Upper Sandusky, O.; W. M. Melville, Lima, O.; C. W. Davis, Jeffersonville, O.

New officers for next year: President, G. L. Hechler, Cleveland, O.; First Vice-President, A. H. Douds, Canton, O.; Second Vice-President, C. W. Davis, Jeffersonville, O.; Secretary, L. C. Hopp, Cleveland, O.; Treasurer, J. H. Von Stein, Upper Sandusky.

A Returned Traveler, and the Report He Brings.—From the minutes of the Pharmaceutical Society of Philadelphia for April, printed in the *American Journal of Pharmacy*, we excerpt the following concerning a well known pharmacist:

Mr. Summers, recently returned from the West Indies, was present and exhibited a number of specimens of interesting drugs, and products of Trinidad and the adjoining islands. The bark of the *lace tree* can be separated into fine layers which resemble very greatly a lace ruffle; its only use is for decorative purposes. *Guava* fruit yields the much esteemed tropical preserve known as guava jelly. *Sapodilla* is a delicious fruit; so is the *Mango*, which Mr. Summers thought to be almost a curse in the West Indies, as the laboring classes there, negroes mostly, would not work if they could live without doing so, and as this tree ripens its fruit nearly every month in the year it can readily be seen that work is not in great favor. The leaves of two plants which flourish in the West Indies, called, respectively, fibre plant (*Agave rigida*) and May pole (*Sanseviera longifolia*), yield valuable fibres; those of the former measuring over 45 inches and those of the latter 48 inches in length; the fibres of the former are much finer and have a soft flaxen feel when handled. *Cacao* fruit was exhibited in three varieties, the finest being obtained in Trinidad, growing at elevations varying from 300 to 1,500 feet. These fruits called out quite a discussion, and a number of photographs were exhibited. Mr. Summers proposed to give a fully illustrated talk upon the results and observations made on his recent trip, at the opening of the meetings next fall.

A vote of thanks for the very interesting talk was voted to Mr. Summers unanimously.

The South Carolina Medical Society.—The forty-third annual meeting of the South Carolina State Medical Society was held at Sumter, S.C., on April 17 to 20, 1893. There were about one hundred members present.

The following papers were read: "Some Surgical Cases in Hospital Practice," by Dr. Manning Simons, of Charleston, S.C. "Purulent Ophthalmia," by Dr. C. W. Kollock, of Charleston, S.C. "Cases of Abdominal Section," by Dr. W. F. Strait, of Rock Hill, S.C. "Neurasthenia Caused by Shock by Lightning," by Dr. E. F. Darby, of Lynchburg, S.C.; in this paper the Doctor stated that he had used "cerebrin" with good result; that this preparation had been brought to the notice of the profession by Dr. Hammond, and was now manufactured by Parke, Davis & Co. Dr. H. O. Marcy, of Boston, Mass., who was present by special invitation of the Association, delivered an interesting and instructive lecture on the "Anatomy and Surgical Treatment of Hernia." His remarks were fully illustrated with stereopticon pictures. In speaking of antiseptics he stated that Johnston's antiseptic soap was one of the best preparations of the kind he ever saw. The next paper was, "Report on the Improvements in Obstetrics," by Dr. P. Gourdin De Saussure, of Charleston, S.C. Dr. F. L. Parker, of Charleston, S.C., reported several cases from private practice. Then followed: "Ophthalmia," by Dr. Geo. W. Howe, of Columbia, S.C.; "Aphasia Following Delivery," by Dr. A. A. Moore, of Camden, S.C.; "Paralysis of the Fauces," by Dr. W. P. Porcher, of Charleston, S.C.

The Price Prize, offered by Dr. Joseph Price, of Philadelphia, for the best essay on the history of surgery in South Carolina, was awarded by the committee to Dr. Edward F. Parker, of Charleston, S.C.

A second prize, offered by Dr. H. O. Marcy, of Boston, for the next best essay on the same subject, was awarded to Dr. L. C. Stephens, of Blackville, S.C.

The following officers were elected: President, Dr. John L. Ancrum, of Charleston; Corresponding Secretary, Dr. M. P. Ravenel, of Charleston; Recording Secretary, Dr. W. P. Porcher, of Charleston; Treasurer, Dr. C. M. Reese, of Charleston.

The next meeting will be held at Rock Hill, S.C., on the fourth Wednesday in April, 1894.

DRUG CLERKS' MUTUAL BENEFIT ASSOCIATION.—"The Retail Drug Clerks' Mutual Benefit Association of the United States" is the comprehensive title of an association lately incorporated in Chicago.

From a prospectus recently issued we learn that the plan of organization is similar to the many benevolent associations in kindred branches, with a supreme council empowered to grant charters to local councils.

The following is an extract from the constitution, which consists of 133 similar sections:

> Sec. 1. This body shall be known as the Retail Drug Clerks' Mutual Benefit Association of the United States, with power to make and amend its own constitution, rules of discipline, and laws for the government of the whole order.
>
> Sec. 2. It is the body whose decision on all appeals taken to it from subordinate councils, and from members of the order, shall be final.
>
> Sec. 3. To unite fraternally all white drug clerks of sound bodily health and good moral character who are socially acceptable and between 18 and 50 years of age.
>
> Sec. 4. To give all moral and material aid in its power to its members and those dependent upon them.
>
> Sec. 5. To educate the members socially, morally, and intellectually, and to assist the widows and orphans of deceased members.

The chief object of the association is to afford benefits to the dependents of its members in case of death, on the mutual plan, ranging, according to age of beneficiary, from 33 cents at 18 years to $1.20 at 50 years for each assessment.

In order to comply with the Illinois statute governing mutual benefit associations not for pecuniary gain, no benefits can be paid or assessments made until the organization numbers 500 members who have paid $10 each and subscribed for $1,000 of insurance.

The idea is commendable, and its execution, entrusted to careful and conservative management, cannot fail to prove of value to that large class whose interests the project is intended to promote.—*Western Druggist*, April, 1893.

Trade Supplement.

The BULLETIN *invites its advertisers and subscribers, and all connected with the drug trade, to send items of information, for these columns, concerning all new departures, products, and facts regarding the general and special trade interests of druggists.*

THE PEOPLE'S PHARMACY is the name of a new enterprise at Meriden, Conn., which celebrated May Day by the display of a fine line of pharmaceutical commodities.

⁂

PARKE, DAVIS & CO. announce the following additions to their list of preparations: Thyroid Glands, in ounces; Laxative wafers; Pill Diuretic Comp.; Pill Arsenic Sulphide, $\frac{1}{60}$ grain; gelatin-coated Dipsomania pill (Mann's); compressed tablet Ferruginous (modification of Blaud's).

⁂

THE Florida Medical Association closed its sessions on April 7th, appointing the second Tuesday in March, 1894, as the date for the next convention, and Tampa, Fla., as the place of meeting. The following officers were elected: President, Dr. F. H. Caldwell, Sanford, Fla.; First Vice-President, Dr. A. J. Wakefield, Jacksonville, Fla.; Second Vice-President, R. P. Izlar, M.D., Ocala, Fla.; Secretary and Treasurer, Dr. J. D. Fernandez, Jacksonville, Fla. There were some fifty or seventy-five doctors in attendance, and a revival of interest and an increase in membership are reported.

⁂

JOSEPH G. TAITE'S SONS, Philadelphia, Pa., manufacturers of druggists' tinware and specialties, carry in stock over fifty different sizes of square gilt cans, suitable for manufacturing-chemists and druggists; and are prepared to meet the increasing demands they have for these goods. They are handsomely made of gold-lacquered tin, with round corners, seamless covers, and thoroughly double-seamed bottoms. For quinine, cinchonidine, pyrogallic acid, powders and herbs of all kinds, petrolatum and ointments, chocolate, cocoa, confections, etc., etc., they make a cheap, convenient, and handsome package, proof against breakage and moisture.

⁂

SAGINAW druggists mourn the loss of one of their best known and most successful associates, Mr. Rudolph Bruske, who died on April 26th after a very brief but painful illness. Mr. Bruske was a native of Prussia, but his parents emigrated to America when he was three years old, so he grew up to be almost entirely American in his associations and his ideas of life. Enough of the old-world instinct of localization, however, prevailed in the affairs of his father's house to guarantee the permanence of his residence, once a fair beginning was made. As this happened to be done in Saginaw, in Saginaw the young Rudolph grew up to manhood, to marriage, and to his life-work. He became student, clerk, and proprietor, and in each case proficiency was his promoter. At the age of 42 he found himself a successful and popular druggist, the head of a happy household of four, and connected with no less than twelve fraternal societies. But in the very glow of the prime of life, the curtain fell, leaving the onlookers dazed with astonishment and grief.

⁂

FLORIDA.

Associated with Roscoe Niblack, of Lake City, is Prof. Ruffin, and they are doing a nice business.

Dr. Chalker, of the firm of Chalker Bros. & Price, Lake City, has just returned from the meeting of the Florida Medical Association. This firm is a very staunch one, composed of energetic and *business* men.

⁂

GEORGIA.

Mr. Harvey, of the firm of Harvey & Harvey, Valdosta, is a most excellent young man, *single*, and has quite a neat store in this progressive little city.

Tillman & McRae, Valdosta, have been succeeded by McRae & Bass, the latter one of the leading doctors of the city.

Clay Dickinson, of Thomasville, besides being the leading druggist of that city, leads all the germans and is as expert with his *pedals* as with the pill and tile.

R. Thomas, Jr., the senior member of that live and progressive firm, Thomas & Dickinson, will leave shortly for the North to spend the hot months. Mr. Thomas has made quite a success of the drug business.

Isaiah Mabbett, of Quitman, is now the sole owner of what was formerly the Mabbett & Jelks drug business.

John R. Avera, Quitman, will lend his pleasant visage to the crowd of pharmacists that will assemble in Rome next August.

E. W. Daniel, Boston, is the firm name now, instead of Beggs & Daniel.

T. D. Sales, of Dawson, is one of the "livest" druggists in the State; he has purchased several stores in his city, and manages them ably.

L. A. Bize, formerly a partner with Mr. Oliver, at Columbus, is now studying medicine, and will no doubt make quite a success in his profession.

H. H. Arrington, Summerville, Ga., the able secretary of the Georgia Pharmaceutical Association, has just returned from his annual fishing trip down in Florida. He says that where he was fishing he was frequently forced to get behind a tree to bait his hook, the fish were so numerous. Mr. Arrington is a deacon, so it must be true.

T. F. Burbank, Cedartown, has some valuable recipes for making "beef tea," etc., which he will impart for a consideration.

Campbell T. King, Macon, stood the most creditable examination before the Board at their last meeting.

Who does not know Treasurer Mallory H. Taylor, of Macon? Not to know him, is to acknowledge yourself no member of the Georgia Pharmaceuticoes. Mr. Taylor is probably the most popular man of this select body.

Cam. Brown, of Gainesville, the popular druggist, is, for a man of his age, a most successful business man and financier.

Dr. E. E. Dixon, Gainesville, was at one time a very prominent practitioner of medicine, but gave it up, and has since made quite a snug little fortune out of the drug business.

Mr. Johnson, the clever and handsome book-keeper for D. W. Curry, Rome, was recently married. 'Twas a Gretna Green affair. Wish you all the happiness, etc.

It should not be forgotten that Georgia druggists are going to make Rome howl on the 10th and 11th of August next. That is the date of the G. P. A. annual meeting, when it will celebrate at Rome its eighteenth birthday and adjourn with all possible unanimity and hurrah boys to "take in" the World's Fair at Chicago. This will be one of Georgia's opportunities, and will unquestionably be improved.

Columbus:

Genial and clever John P. Turner, of this city, has more varied accomplishments than any man living. To enumerate them would be a veritable task of Sisyphus.

Evans & Howard, a firm composed of two handsome and elegant gentlemen, have the best soda-water trade in the city. Go there when you will, and "the garden is smiling" with girls. In addition to this, they have ensconced in the rear of the store as pleasant a coterie of doctors as you will find anywhere. To sum it all up, this firm "is up to snuff."

President E. M. Wheat, of Hall's City Drug Store, is a most pleasant and affable gentleman as well as skillful pharmacist.

It is whispered that that prince of good fellows, Mr. Williams, who presides over the prescription department of Brannan & Carson, this city, will shortly shake off his bonds of celibacy and be one of the great army of "the henpecked."

Besides being one of the most successful financiers in the city, Ed. Patterson, of the firm of Patterson & Thomas, is socially one of the most prominent, and a more genteel, refined young man does not breathe.

W. F. Sullivan is now a benedict.

This city is the home of clever Jeff. Turner, the popular and successful traveler for Tarrant & Co. Jeff. is as popular at home as abroad, and deservedly so.

ILLINOIS AND INDIANA.

C. H. Dawson, of Decatur, Ill., has added an 11-lb. girl to the sisterhood of druggists.

The firm of Colton & Rife, of Crawfordsville, Ind., is a new one, but it is made up of two live men, and they are beginning to enjoy a good trade.

The firm of Bowman & Blewett, of Bloomington, Ind., will soon dissolve, Mr. Bowman retiring.

H. Lindey's Sons, of Bloomington, Ind., have made some substantial improvements in the interior of their store. Walter reports a very fine wall-paper trade.

The Carleton store at Bedford, Ind., having failed, is now in the hands of Dave Stewart, and is for sale.

John F. Johnson, who lost a fortune trying to build up the house of Johnson & Lilly, is now in the retail drug trade in Indianapolis. Mr. Johnson is a most pleasant gentleman.

Dr. G. W. Walls, of Bedford, Ind., has a toilet cream that does the work. It stands up with the best of them.

Phepps & Cogswell, of Bedford, Ind., report business good. They have the largest newspaper trade in Southern Indiana.

Fred Menzel's stock in Washington, Ind., has gone into the hands of a receiver. Too bad, for Fred was one of the hardest workers of them all.

⁂

MINNESOTA.

Cartelyon & Maldern are the proprietors of the new pharmacy at Montevideo. Mr. Maldern is the practical pharmacist of the concern, and was formerly with Smith's dispensary at Worthington.

Edwin Nordstrom, formerly in "Ireland's Pharmacy," at Granite Falls, later at Montevideo, is now the proprietor of a well kept store at Sacred Heart.

E. B. Heiberg, Montevideo's former leading druggist, but for the past few years at Franklin and Riverside avenues, Minneapolis, is again at home; and in the future no inducements, however glowing they appear, will tempt him to desert his old standby, Montevideo, for the city.

Dr. O. J. Berg, formerly manager of the "St. Louis Drug Store" in Minneapolis, has taken to himself a partner and opened a neat and complete little pharmacy at Dawson, Lac-qui-Parle county. The Doctor is a rusher, and the move will be a success. O. J. Berg & Co. is the firm name.

Dr. Lewis Fernald, Bellingham's popular M. D. and druggist, left on the 5th of this month for a trip to New York, to return *via* the World's Fair. The Doctor needs this rest and change, having had in the past few months more than his share of this world's hardships, trials, and sorrows.

Albert Lano, the pioneer druggist of Madison, is the owner of a very large collection of cured bird-skins, comprising nearly all of the northern birds, many of them very difficult to obtain. Mr. Lano is an artist in this line, and his work of preparing the specimens for his cabinet is very complete indeed. Those who are interested in these matters should correspond with him, and perhaps exchanges of mutual advantage will result. He recently received a collection from South America.

H. A. Stratte & Co., of Dawson, are looking over the ground at Boyd, with the view of starting a branch there.

S. W. Treadway, for some years a popular clerk, and later engaged in business with his brother at the old "Weller stand," corner Fourth street and Hennepin avenue, Minneapolis, is in charge of "Orth's Pharmacy" at Morton, and has under his supervision the arrangements of Mr. Orth's new store. Mr. Treadway has had a wide experience in such work, and Morton and vicinity may see a store of exceptional style and finish, and the stock very complete, when he announces its opening to the public.

"Naegeli & Co., Pharmacists," is the name over a new pharmacy at Hutchinson. It will be under the management of E. Naegeli, who for some years past has been engaged in Franken's pharmacy at Chaska. He will be assisted by John Streeter. The boys are taking hold of the work with a will, and a decided change has taken place, especially in part of the Burnham stock which formerly occupied the store-room. Their success is practically certain.

E. W. Rebstock, of Hutchinson, dealer in drugs and notions, has failed.

On or about July 1st the new jobbing house of Duluth will open its doors to the druggists of the Northwest. The firm name will be Sagar Drug Co. The firm will start out under very favorable financial circumstances, and with the vast field west and southwest, north, northwest, and northeast, success must surely be theirs. Charles H. Sagar, recently of Auburn, N. Y., will be the practical manager, and his successful financiering of the business with which he was connected at the above-mentioned place will no doubt follow him and his company to the Zenith City.

"Duluth Drug Co." is the name chosen by the new stock company formed recently with the old reliable Fourth-street drug firm, Hugo & Le Richeux, at its head. The location for the new store will be on Superior street, opposite the Merchants' Hotel, one of the best retail corners in the city. The treasurer and manager of the new firm will be A. C. Le Richeux, who enlarged and advanced the business of the firm's Fourth-street store, and will no doubt place the new pharmacy upon as profitable a footing, proportionately, as the old. Neither money nor pains will be spared to make the new pharmacy equal if not superior to any in the State. Its principal aim will be as a prescription store, in every sense of the word. We wish the Duluth Drug Co. success.

Jos. A. Poetz, formerly with Bennett's Pharmacy, of St. Peter, and later with W. A. Frost & Co., of St. Paul, is now the proprietor of a very well stocked store at Winthrop. His early training in the drug business was good, and it shows itself now in his tasty arrangements at his present location.

The village of Gibbon has for some months past been without a drug store and an M.D. C. B. McCurdy, however, has come to the relief, and will at once stock up with a complete line of pharmaceuticals and sundries, and will be assisted in disposing of the same for the benefit of the community by Dr. F. M. Archibald, recently from Chicago.

Fred. Kaltwasser, for some time past second prescription man at Harter & Robinson's pharmacy, Minneapolis, has accepted a similar position at John M. Miller's store at St. James.

⁂

MISSOURI.

Kansas City:

H. W. Evans and J. A. Gallagher, two of the best known retail druggists of this city, have formed a stock company and purchased the Kansas City branch of the Meyer Bros. Drug Co. It will be known in the future as the Evans-Gallagher Drug Co. Mr. Evans has already disposed of his large retail store on Main street, and Mr. Gallagher intends to do likewise as soon as a purchaser can be found. Both will give their entire attention to the wholesale trade. We predict for them a large business in Kansas City, as both are well known and very popular.

Hurrah for the State Pharmaceutical Association to meet June 13th, 14th, 15th, and 16th, at Excelsior Springs! Every Kansas City druggist is expected to be there, and those that are not will miss a treat.

Arthur B. Beck, of the firm of Beck & Swearinger, Sixth and Walnut streets, was married to Miss Elma Rich, at Goshen, Ind., Wednesday, May 10th, and will be at home after June 10th, 3031 Cherry street. We wish them a happy life.

O. W. Kneuger succeeds S. J. Rowell, corner of Eighth and Woodland streets, under the Hotel Woodland, this making three drug stores he now operates. His brother Dick will be in charge.

Fred. Brunig, Ph.G., has opened a neat and attractive store on West Ninth street. Fred is sure to succeed, as he is one of the few that consider quality above price, and he knows that by always selling the purest and best he is bound to get the business.

W. M. Federman, the energetic pharmacist who has been in the drug business at Independence street and Forrest avenue for a number of years, bought the large retail store at 908 Main street from H. W. Evans & Bro. This store enjoys the lion's share of the business of the entire city, and we know of no one more capable to hold and increase the business than Mr. Federman.

David Walker, of Walker Bros., Penn street and Southwest boulevard, has just returned from a two weeks' trip East. He reports having had a good time.

S. P. Nickells and C. G. Nickells have gone into the specialty business at 1108 Baltimore avenue, and their firm will be known as the Kansas City Drug Specialty Co.

Wm. Daish, druggist, of Kansas City, Kas., advertised in a Chicago paper for a suite of rooms, and received in one day 624 letters replying to the advertisement. He has them in his show window, all bearing the postmark of April 24th.

NORTH DAKOTA.

Albert McMurphy, for some time past in charge of the prescription department of G. W. Franchere, of Lake Crystal, Minn., has accepted a similar position with O. Granrud, of Grand Forks, North Dakota.

⁂

PENNSYLVANIA.

J. L. Swear has opened up a new pharmacy at the corner of Grant and Western avenues, Allegheny, and is doing a good business.

John W. Miller has opened a new drug store on Allegheny avenue, Allegheny.

Pittsburgh:

James Kerr, Jr., the Smithfield-street pharmacist, has returned from a business trip to New York City.

M. Rubenstein has opened a pharmacy at 349 Fifth avenue. He will cater to the Polish trade in that district, and will likely work up a good steady trade.

Dr. J. F. McClaran, the popular proprietor of the East End Pharmacy, at 19 Frankstorm avenue, has sold out to A. H. Sorg, who was formerly with R. M. Sterritt & Co. on Penn avenue. Dr. McClaran will open a pharmacy at Sewickley, the fashionable suburb on the Fort Wayne road.

Dr. Frank McKenzie, the well known drug clerk of the East End, has gone to Harrisburg to try the final examination. He is hopeful that he will pass without any trouble whatever.

Harry Duff, formerly of the Duquesne Pharmacy on Smithfield street, has gone to Chicago.

W. J. McClurg, the tobacco dealer, at the corner of Fifth avenue and Smithfield street, has opened up a soda-water fountain in his establishment, and is having a very fair patronage. The dispenser of drinks at his stand is George Merrit, who was formerly at the Crystal Pharmacy, corner of Market and Liberty streets.

Harry Dunmire, of the Crystal Pharmacy, has resigned and left for his home in Chicago, to take a vacation. He will return to Pittsburgh in the fall.

⁂

TEXAS.

Ketchum's Pharmacy, until recently at Palopinto, Tex., is now at Mineral Wells. M. B. Ketchum, the proprietor, having sold the former establishment to W. S. Canaster, has placed the old sign over a new stock at his new home.

F. T. Knox & Co., recently burned out at Anson, Tex., have reopened with a new stock at the same place.

N. N. True, of Fort Worth, Tex., has sold his entire interest to Geo. H. Dashwood, and the store is now known as "Dashwood's Pharmacy."

The town of Cisco, Tex., was visited by a disastrous cyclone on the night of April 28th. It was a place of about 2,500 inhabitants, and is almost completely destroyed. Among the business houses demolished were the drug stores of O. T. Maxwell and J. J. Martin & Co.

Ferd. von Mueller.

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INDEX OF CONTENTS.

Editorial. PAGE
Baron Sir Ferdinand von Mueller, K.C.M.G., M.D., Ph.D., F.R.S 241
The Pan-American Medical Congress 243
Where are We At? 243
Original Articles.
PRACTICAL PHARMACY.
The Various Styles of Dispensing Apparatus. By Thomas Warwick 244
CHEMISTRY.
Letters from Dorpat. By Professor Rudolph Kobert 246
The Discovery of Alcohol. By Berthelot 250
Aromatic Spirit of Ammonia. By Adam Conrath 252
BOTANY AND MATERIA MEDICA.
Some Suggested Emendations in Botanical Terminology 253
Poisonous Plants 253
Nut Cracking 253
Correspondence.
London Letter 255
Berlin Letter 256
New York Letter 258
Chicago Letter 259
Pharmacy in Italy 259
Final Report of the Committee on Permanent Organization of the Pan-American Medical Congress 261
Where are We At? 262
It is Packed, not Baked 263
Chemistry of Drugs 263
Imports of Drugs, etc., at the Port of New York, for the Month of May, 1893 265
Book Reviews 266
Facetiæ 267
Abstracts and Translations 269
Pharmaceutical Progress 276
Notes and News 282
Trade Supplement 286

BARON SIR FERDINAND VON MUELLER, K.C.M.G., M.D., Ph.D., F.R.S.

It is with sincere pleasure we are able to present to our readers in this issue the portrait of this distinguished investigator in the fields of botanical research, who has done very much to add to the resources of the materia medica by giving to therapeutics many medicinal flora the virtues of which were hitherto unknown, through the results of his discoveries and experiments.

No investigator has so indefatigably and continuously and successfully labored in the field that he has ably developed, and many honors have been bestowed upon him for his original discoveries and additions to floriculture and unexampled work in horticulture.

Baron von Mueller has received his honors with characteristic modesty, and, while his personal correspondence has afforded us some information concerning his researches, he has referred us, for an account of his labors, to a description which others had prepared, and which appears in the volume on "Men and Women of the Time." This publication has gathered in its pages the records of the most eminent men and women of the world, and its sketch of Baron von Mueller, though necessarily brief in such a comprehensive and at the same time manageably small volume, we reproduce in the hope that it will afford, to some extent at least, a view of the remarkable fertility of this renowned botanist and the utility of his scientific contributions to the literature of fields in which he has worked with enthusiasm and success.

Most of his works are of a strictly technical character. We will not here particularize all of them, but may mention one especially, "Select Extra-Tropical Plants,"* which will be found useful to the pharmacist, the nurseryman, and the landscape gardener. It well illustrates the vast amount of knowledge Baron von Mueller has gathered by his researches.

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* A work of 449 pages, published by George S. Davis, Detroit, Mich.; price, $1.50.

The author groups in it all the genera enumerated, according to the products which they yield; thus facility is afforded for tracing out any series of plants regarding which special economic information may be sought, or which may at any time prominently engage the attention of the cultivator, the manufacturer, or the artisan. Doubtless many plants of primary importance for rural requirements here alluded to have long been secured by pioneers of immigration, who strove to enrich the cultural resources of their adopted country. The author, as far as his public or private means would permit, has endeavored for more than a quarter of a century to take an honorable share in the work that has been done. The volume mentioned above should find a place in the library of every educational establishment for frequent reference to its pages.

The increased ease of communication which has latterly arisen between nearly all parts of the globe places us in a fair position for independent efforts, to suggest or promote the introduction of new vegetable treasures from unexplored regions, or to submit neglected plants of promising value to unbiased original tests.

For enterprises of this kind, every civilized State is striving to afford, in well planned, thoughtfully directed and generously supported special scientific establishments, a needful aid, not merely for adding to the prosperity, comfort and enjoyment of the present generation, but also with an anticipation of gaining the gratitude of posterity; and this, as a rule, is done with a sensitive jealousy, to maintain thereby the fair fame of the country for scientific dignity and industrial development.

"Baron Sir Ferdinand von Mueller, K.C.M.G., M.D., Ph.D., F.R.S., son of the late Frederick Mueller, of Rostock, Germany, and Louisa, daughter of George Martens, of Aschersleben, was born in Rostock, 1825; educated, after the early death of his parents, in Schleswig; studied in Kiel, and examined extensively the vegetation of Schleswig and Holstein from 1840 to 1847, when, on account of hereditary inclination to phthisis, he emigrated to Australia. He travelled through the extensive territory of South Australia, mainly for researches on plants, from 1848 till 1852, at his private expense. In 1852 he accepted the newly created office of Government Botanist for Victoria; explored there till 1855, examining also the whole alpine vegetation of Australia, previously utterly unknown; ascended and named Mount Hotham, the Barkly Ranges, and many other mountains; joined, as phytographic naturalist, the expedition sent out under Augustus Gregory by the Duke of Newcastle, to explore the River Victoria and other portions of the north parts of the Australian continent; was one of the four that reached Termination Lake in 1856; went throughout the whole route of the same expedition, conducted overland by Gregory to Moreton Bay; accepted the directorship of the Botanical Garden of Melbourne, in 1857, which office he held till 1873, raising that institution to high fame, and establishing scientific relations with all parts of the globe, in order to introduce useful and rare plants into the colony and to make known Australian plants abroad. He was one of the commissioners for the industrial exhibitions in Melbourne in 1854, 1862, and 1867.

"He was elected a Fellow of the Royal Society of London in 1861; was included in the first Colonial nominations for the Order of SS. Michael and George; nominated a Grand Cross Dignitary of the Christus Order, a Commander of the Order of St. Iago, of Portugal, of Isabella of Spain, and of Philipp of Hesse, and created an hereditary baron by the King of Wurtemberg in 1871. He extensively promoted geographic research in Australian territory also. Mountains, rivers, and lakes are named in Australia in honor of Baron von Mueller, also a glacier and river in New Zealand, a mountain in Spitzbergen, and a cataract in the Brazils. The Baron still continues his researches in Melbourne. In 1879 he was rewarded for his Colonial services with the Knight Commandership of the Order of St. Michael and St. George. In 1888 he was the recipient of one of the two royal medals of the Royal Society of London. The Baron is corresponding member of over one hundred and fifty scientific societies, including many academies in various parts of the world." *

Among his contributions to the literature of botany are: "Fragmenta Phytographiæ Australianæ," with 60 plates; Melbourne, 1858–1878; 11 vols. (the first large work in the Latin language ever published in Australia), "Report on the Plants Collected during Mr. Babbage's Expedition into South Australia in 1858." "The Plants Indigenous to the Colony of Victoria" appeared, handsomely illustrated, in Melbourne, 1860. "Flora Australiensis" (in conjunction with Bentham), 1863–1870; a 7-vol. work. "The Vegetation of the Chatham Islands," fully illustrated, Melbourne, 1864. "Descriptive Notes on Papuan Plants," 1875. "Select Extra-Tropical Plants Readily Eligible for Industrial Culture or Naturalization," Melbourne, 1876; sixth edition, 1881; two more editions have since been printed. Translated "Wittstein's Organic Constitution of Plants and Vegetable Substances," making numerous additions of his own; 1878. "Eucalyptographia: A Descriptive Atlas of the Eucalypts of Australia and Adjoining Islands," with 110 quarto plates and many original therapeutic notes; Melbourne, 1879–1882. "Index Perfectus ad Caroli Linnæi Species Plantarum," Melbourne, 1880. "West Australia Plants in Northwestern Australia," Perth, 1881. "Systematic Census of Australian Plants," Melbourne, 1882. "Descriptive Notes of the Eucalypts of Austra-

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* "Men and Women of the Time." Geo. Routledge & Sons, Ltd., London, Glasgow, Manchester, and New York.

lia," Melbourne, 1882. "Western Australian Plants Indigenous around Sharp Bay," 1883. "Excerpta from Schulz's Treatise on Eucalyptus Oil," Sydney, 1881–1884. "The Plants of New South Wales." "Key to the System of Victoria Plants—Enumeration of Native Species," with numerous wood-cuts. "Description and Illustra- of the Myoporinous Plants of Australia," 1886. "Iconography of Australian Species of Acacia and Cognate Genera," with 130 plates, showing (as in all the author's plates) analyses from bud to embryo. "Second Systematic Census of Australian Plants," according to the author's simplification of the Jussieu-DeCandolle system; 1887. "Iconography of Australian Salsolaceæ," with 96 quarto plates.

Baron Von Mueller is now engaged in writing "The Iconography of Candolleaceæ."

Numerous essays have also appeared during the past forty years from the pen of this prolific and exact botanist.

THE PAN-AMERICAN MEDICAL CONGRESS.

In the correspondence columns of this number of the Bulletin appears the final announcement of the chairman of the Committee on Permanent Organization, Dr. Charles A. L. Reed.

Every intelligent pharmacist should rouse himself to an appreciation of the grand objects that it is possible for this Congress to achieve.

No one who has given due consideration to the motives of those who have chiefly promoted this meeting can but applaud and support with enthusiasm the purposes of this gathering of the medical profession of the three Americas. It is a movement toward the worldwide unification of the healing art—a universal brotherhood of co-workers for advancement of the science and practice of preventing and relieving disease.

It will bring about a consummation devoutly to be wished—uniformity of pharmaceutical methods—and promote the realization of the hope of One Pharmacopœia for all nations, based on the highest and most advanced modern methods.

The effect from a commercial point of view to the manufacturers, all over the world, of medicinal products, will doubtless be not only to elevate the present standard of excellence, but to educate public opinion to demand the inauguration of that time when mutual coöperation of opinion shall make medicine-making a science, and rid the civilized world of the evils now prevalent resulting from the sale of proprietary and patented medicines of unknown formulæ, and establish purity and uniformity as the only accepted standard for the practitioners and dispensers of medicinal remedies, thereby promoting the interests of all.

In order to achieve this ideal, physicians and pharmacists should unite in aiding the promoters of this Congress. A practical way of evincing their interest is to register at once by paying the fee of ten dollars to the treasurer of the Pan-American Congress, Dr. A. M. Owen, Evansville, Indiana.

The organization has been effected under the style and title of the Pan-American Medical Congress, to be held at the City of Washington, D.C., Sept. 5, 6, 7, and 8, A.D. 1893, under the presidency of Prof. Wm. Pepper, M.D., LL.D., of Philadelphia. Dr. Charles A. L. Reed, chairman of the Committee on Permanent Organization, 311 Elm street, Cincinnati, who has done so much to promote the interests and objects of this meeting, will supply both the preliminary and the final report to all interested.

WHERE ARE WE AT?

Under this title a correspondent contributes to this number of the Bulletin some suggestions on the subject of that bane of the arts of medicine and pharmacy, the practice of substitution by many druggists in filling orders, who use other and inferior products than those specified, which results in rendering therapeutic effects *nil*, certainly a dangerous practice for druggists to employ.

How the substitution evil may be remedied, our correspondent clearly and tersely points out, and indicates the operation of the substitution practice.

We heartily commend to our readers the sentiments expressed in this earnest plea for honest and fair dealing:

"Physicians who are skilled in their profession and note the therapeutic effect of drugs, generally know that cheap drugs are always dearest. The scientific physician prescribes and specifies the best medicines, and those who do not are doctors as cheap as the drugs they would permit as a substitute. Let this evil of substitution once become prevalent, and the incentive to the production of therapeutical drugs of the highest grade and quality will fail to have its proper effect upon conscientious and progressive pharmacists; they will either cease to occupy the field of competition, or else drop into the manufacture of a low grade of products suitable only to cheap doctors and charlatans.

"But as pharmacy has kept pace with progressive and scientific methods, the tide of advancement must go on, and those who stand in the way of the onward march will be swamped and relegated to the sloughs of obscurity.

"Cheap drugs are dearest, dangerous, and most disappointing.

"Those who are sick are ever ready to pay for quality in medicines, and the druggist who would substitute should be held responsible in law for his dereliction of duty.

"If 'honesty is the best policy' in the general affairs of life, the force of the adage is certainly emphasized when applied to the choice of medicines in treating the 'ills that flesh is heir to.'"

PRACTICAL PHARMACY.

THE VARIOUS STYLES OF DISPENSING APPARATUS.

BY THOMAS WARWICK.

To the thoughtful man, there is no study more fruitful than that of evolution. Whether we are studying the development of an organism, as when we consider the evolution of man, or whether we inquire into the growth of a machine or a social state, we always find that a knowledge of the processes by which the present stage of perfection has been obtained, will furnish us with a reliable clue in selecting the best of several competing forms, and it will also greatly aid future progress, for, in the large majority of cases, the path to be followed in the future is precisely that which has been found to give the best results in the past.

This rule is universal, applying as well to the lowest things as to the highest, and consequently the druggist who wishes to learn to thoroughly understand dispensing apparatus must have some idea of the process by which our handsome marble structures have been evolved from their simple primogenitors.

Soda-water was undoubtedly first dispensed from bottles, in almost identically the same manner as is customary to-day in bar-rooms and restaurants. In some countries, in fact, as in England and Australia, this is even to-day practically the only method of dispensing the drink in existence. When the glass siphon was invented, however, it rapidly superseded the bottle, being more compact and economical to handle, the beverage being more conveniently dispensed, and the new method possessing withal the inestimable advantage that the drink could be dispensed in as small quantities as might be desired, without the portion remaining in the bottle losing all of its gas. The only drawback to the use of the siphon was that it could not be used for sweetened drinks, as the syrups clogged up all the passages, and a thorough cleaning of the siphon-head was impracticable. This led to keeping the syrups in separate containers (usually glass bottles), from which the required amount was poured into a tumbler when desired, and the tumbler was then filled with plain soda-water from a siphon.

But as popular taste for the beverage increased, even the siphons were found too small; and as glass vessels could not be constructed of sufficient strength if their capacity were increased, some other material had to be impressed into service. Copper was naturally the one first selected, being the easiest to work of all that were at all adapted for the purpose. Moreover, as it was necessary to protect the beverage from direct contact with the copper, the interior was washed with tin. These copper reservoirs were the earliest portable fountains, and possessed no tube, so that to empty them it was necessary to stand them upside-down under the counter. It was only later that the idea occurred to some genius that there was no real reason why the fountain might not be constructed on the same plan as the glass siphon, with a tube extending to the bottom, so that it could be emptied even in an upright position.

With the advent of the portable fountain, of course the method of dispensing had to be slightly modified, and regular goose-necks or draught-arms, fastened to the counter, were employed, being connected to the fountain by a leader-pipe of sufficient length. These goose-necks, with few essential modifications, are almost identical with those we still use at the present day.

When portable fountains were provided with tubes, a very primitive device was resorted to by small dispensers; namely, they fastened to the fountain-cock a small piece of block-tin pipe curved over into an arch, so as to form a sort of draught-arm. By holding a tumbler under the bent tube, and opening the fountain-cock, a glass of beverage was more or less conveniently dispensed.

But the public was now beginning to demand cold drinks, and to satisfy this demand three systems were resorted to. The first was to put ice into the tumbler. The second was the construction of what are known as draught-vases, which were, as their name indicates, metal vases placed on the counter, and bearing usually two draught-arms. The pipe leading from the fountain was coiled up in these vases to form a cooler upon which the ice rested, and the soda-water passing through the pipe was refrigerated in this manner. Here was indeed the primitive type of our modern dispensing apparatus, save that the case, instead of being of marble, was of painted iron, or of brass heavily silver-plated. Some very handsome designs in silver-plated draught-vases were put upon the market at this time, some being so elaborate as to sell for several hundred dollars—quite a sum for a dispenser in those days. The third method of cooling, but one that did not come into general use until long afterwards, was what is known as a cooler-box, fastened under the counter. This was nothing but a tin-lined box containing a coil cooler similar to that used in the draught-vases.

The marble dispensing apparatus followed closely upon the draught-vase. The practice of putting ice into the tumblers had instigated the custom of shaving the ice to cause it to melt quicker; and it occurred to some bright mind that the ice-shaver could be boxed, and that the same box could be used for holding the draught-arms. From this it was but a short step to putting the coolers in the marble box; and then, dispensers having probably discovered the benefit of cooling their syrups as well as their plain soda, it was found convenient to make regular syrup-tanks, with faucets projecting from the walls of the apparatus, so that the syrups could be as easily and conveniently dispensed as the soda-water.

Since then, improvements of various sorts have been added, some of great importance and others of mere detail, until finally we have in operation to-day dispensing apparatus of great beauty, convenience, and fine workmanship. Yet, much as we may admire the present apparatus, there are three great lacks in dispensing apparatus as now constructed. The first I have already mentioned in a previous article; it is the need of a draught-arm that will give a coarse and a fine stream with a single turn of the wheel. The second great desideratum is a registering attachment to count the number of drinks served. Several of these devices have been patented, but all that have come to my notice are too complicated. Something simple, effective, inexpensive, and not liable to get out of order, is desired, and it would seem as though a little ingenuity could readily solve the problem. The third great desideratum is a dispensing apparatus that will deliver its waters automatically. The customer should be able to drop a nickel in the slot and get his glass of soda with any desired syrup. Something practical of this nature will be a great boon both to the thirsty customer and to the tired druggist, who is sometimes obliged on a hot day to drop the prescription he is compounding and lend his aid at the soda-fountain. Quite a number of devices for dispensing drinks automatically have been patented, and I have seen others which, although not patented, possess points of great merit; consequently, if manufacturers wished to make either of these three improvements in their apparatus, the execution of the project would not be difficult. On the other hand, too, if the customers demanded these improvements, they would soon obtain them; but manufacturers are loth to make improvements, for these represent a considerable amount of capital involved, and a still more considerable amount is required afterwards to educate customers to appreciate the value of the innovations.

Of course I do not pretend to say that these three improvements are the only ones desirable in dispensing apparatus; on the contrary, there is not a single portion of the apparatus which cannot be greatly improved upon, but these are the three points which seem to me to be the most important and to deserve the first consideration.

Having taken a look at the dispensing apparatus of the past, it may be profitable to consider the apparatus of the present, and form some idea of the different kinds now on the market. There are three great classes of dispensing apparatus in general use at present: the draught-columns; the metal apparatus, or "mineral-arcs" as they are commonly called; and the marble or tile apparatus.

Of the draught-columns, or goose-necks, there is but little to say, for, with the exception of slight differences in size and ornamentation, they are much the same by whomsoever manufactured. There would, however, be room for considerable variety in the shape of the draught-column, as has been shown by one manufacturer who has put a device of this kind on the market in the shape of a siphon covered with wire netting. This makes a most attractive addition to the counter, and the idea could be utilized in a thousand different ways. Draught-columns are, however, only used where cheapness is desired or where the counter-space is extremely limited—for it is inconvenient to keep the syrups in bottles, and a cooler-box under the counter cannot keep soda-water cold unless a very brisk business is done, for the water that stands in the column itself, after passing through the cooler, rapidly becomes warm.

Nevertheless, singular to state, it is a modified form of draught-column that is used by one of the largest, if not the largest, dispensers of soda-water in the United States. In his different establishments in the large cities of the Union, he invariably uses a metal apparatus inclosing the draught-arms and containing recesses for the syrup bottles to stand in. The polished silver of the apparatus, joined with the variously colored syrups in the bottles, makes a most attractive counter-piece, whose beauty is enhanced by a jet of water playing over a Parian statuette. The problem of securing a sufficient degree of cold to the beverages is solved by using coolers of increased efficiency, and by the briskness of the trade done.

As regards the second great class of dispensing apparatus, namely, the mineral-arcs, they possess the same disadvantage as the draught-column, namely, the difficulty of keeping the water cool when it stands for a while in the pipes above the counter. Nevertheless, the mineral-arcs make such a handsome addition to a drug store, take up so little room, and are so cheap compared to the show they make, that a large number of them are in use to-day. They differ from the draught-columns principally in the fact that they contain the syrups as well as the waters, and that they are much more elaborate in design.

As regards the marble or tile apparatus, these are divided into four great classes. First, the box apparatus, which are usually single-faced apparatus, and which, as their name indicates, are box-shaped without any superstructure to speak of. The second class are the cottage apparatus, which are usually double-faced, and which have a superstructure of some sort. Third come the wall apparatus, which are single-faced and are made to fit against a wall, but which have an elaborate superstructure, a plate-glass mirror either straight or sloping being an almost invariable accompaniment. Lastly may be mentioned the detached apparatus, such as are used at exhibitions, etc., where it is desirable to occupy a central location and dispense the waters rapidly. In this case the apparatus has draught-arms on all sides; and a second counter, a few feet away, encircles that on which the apparatus rests.

These are the four great classes of apparatus on the market; and while manufacturers every year put out new designs, I must confess that for my part there are very few models which strike me as being really handsome. In fact, some of them contravene all the rules of art and of common sense, and I have seen some specimens so top heavy that it was really painful to look at them; there was always the impression that they would topple over at any moment.

Moreover there is a great monotony in the designs produced—a monotony due in part to the difficulty of joining the heavy marble slabs, and to the expense of cutting them into varied shapes; but still, everything considered, I think it would be possible to produce some really novel designs if sufficient study were given to the matter.

Besides the four classes of apparatus already mentioned, it occasionally happens that apparatus are desired for special purposes. For example: when a private family wishes an apparatus, they usually desire it arranged in a sort of cupboard, with lock and key, so as to keep it out of reach of the servants. In like manner peddlers who make a business of traveling about, selling soda-water by the glass, wish their apparatus mounted on wheels, and desire special compartments for the portable fountains, etc. To meet such demands, manufacturers have put special forms of apparatus on the market, but they differ in no essential respect from those already described.

In deciding what class of apparatus to buy, the druggist must be governed entirely by the length of his purse and by the arrangement of his store. If he can spare sufficient space to put in a wall apparatus, this is usually to be preferred. If not, a box or cottage apparatus on the counter, according to his means, must be decided on. It is only the very largest establishments that can afford a detached apparatus, and usually the arrangment of the store is such that a detached apparatus cannot be used, as it would completely block up the passage-way. Hence in some of the very largest establishments the proprietors must be content with a very long wall apparatus, usually formed by joining together two or more small apparatus, with mirrors between them, thus producing a most imposing impression with a minimum of outlay.

In concluding this article, I would say that while all druggists cannot afford elaborate apparatus, yet anyone can with a little ingenuity add considerably to the attractiveness of his soda-fountain. Even the smallest box apparatus can be made to present quite a creditable appearance if a small statuette or a vase of flowers or grasses be stood upon the cover. Such an addition, while nothing in itself, will yet double the effect produced upon the customer, and it is well to remember that by the majority of patrons the quality of the beverage dispensed is judged by the amount of show the apparatus makes. And the world would be fortunate indeed if it were only soda-water that were judged by this criterion.

CHEMISTRY.

LETTERS FROM DORPAT.

BY PROFESSOR RUDOLPH KOBERT.

No. 1.

On Cathartic Acid and Its Action.

During the last twenty years industrial chemistry has placed upon the market an immense number of new substances intended for therapeutic uses, not a few of which are to be regarded as constituting a veritable enrichment of our materia medica. One class of remedies alone, and indeed the very class which is employed with greatest frequency—that of cathartics—has virtually not been enriched at all, and we are still dependent upon the drugs which have been in vogue for hundreds and thousands of years. Under such circumstances, the following report, dealing with the active substance of senna, should not be devoid of interest.

The first writers who sought to isolate an active principle from the senna, were Lassaigne and Feneulle. They termed it Cathartin.

In 1843, Heerlein[*] denied to this cathartin any activity whatever, and declared that no active constituent was to be extracted from the senna leaves by means of alcohol.

In 1845, Deane,[†] on the other hand, proposed to estimate the therapeutic value of the senna leaves in accordance with the quantity of extractive to be obtained therefrom.

Bley and Disel[‡] discussed the resin obtained from the senna by Bernath, which was considered active by the latter. They then isolated a yellow resinous substance, which they termed chrysoretin; further a brown resin and a brown extractive substance—cathartin. These three preparations did not exhibit a laxative action. The same thing proved true of an alcoholic extract of senna.

Martius[§] found likewise that the cathartin of Lassaigne and Feneulle is a mixture of different bodies. The results of his physiological investigations also harmonized with those executed by Heerlein, Bley, and

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[*] Buchner's *Repertorium*, Bd. 79, p. 219.

[†] Buchner's *Repertorium*, Bd. 90, p. 439.

[‡] *Archiv d. Pharm.*, Bd. lx, 2 Reihe, p. 257.

[§] Monographie d. Sennesblätter, 1857.

Disel; that is, neither the cathartin nor an alcoholic extract of the senna leaves exerted any action whatever on the intestinal tract. On the other hand, the leaves exhausted with alcohol still exhibited their characteristic properties.

Martius then declares the chrysophanic acid to be the active principle of the three drugs: Fol. *Sennæ*, rad. *Rhei*, and cort. *Rhamni frangulæ*.

A number of labors followed, all of which appeared under Prof. Buchheim, of Dorpat, making it their chief task to determine the active principle of senna.

Tundermann* next called attention to the fact that the active portion of the senna was sparingly soluble in alcohol. He accordingly extracted the senna leaves with alcohol, and only then with water. He thereupon mixed the aqueous extract with alcohol, obtaining the active constituent in the precipitate. Of this, 3.5 grammes exhibited a cathartic action, the urine assuming a red coloration on the addition of alkalies. On washing out this precipitate with 70-per-cent. alcohol, it was deprived of a part of its purgative action; after this treatment, however, griping was not at all observable, and the urine was no longer colored on the addition of alkalies. From the filtrate of the first mentioned alcohol precipitate, it was found possible, after evaporation, to yet throw down active substance with the aid of strong alcohol, the physiological action not being attended with griping; the urine exhibited the color reaction.

Sawicky † corroborated the above investigations, and found that an aqueous senna extract loses little of its activity on evaporation with dilute H_2SO_4. He further exhausted the senna leaves with boiling water, mixed the decoction with acetate of lead, decomposed the precipitate obtained with H_2S gas, condensed the filtrate, and treated with alcohol. Only a part was taken up by the latter, and it alone disclosed any action on the intestinal canal. The liquid was dried on the vapor bath; of the residue a quantity corresponding to 60 grammes senna proved active, the urine showing the familiar color reaction. Sawicky separates this substance from the tartaric acid mixed with it, with ammonia and calcium chloride, and removes the excess of lime with carbonate of sodium. Inasmuch as the filtrate after this operation exhibited no further action, he believes that the pure substance would be too readily absorbed in the intestinal canal. Since, now, the absorption of the magnesium salts is very slight, he produces in the proper manner such a salt of this substance, a quantity of which corresponding to 90 grammes of senna proved active and caused griping; alkalies colored the urine red. Sawicky believes that the active substance is an acid soluble in alcohol when in free state, and united with lime and magnesium in the senna leaves.

Schubersky* showed that the aqueous extract of the senna leaves loses all its activity on boiling with lime, and acids with this mixture develop H_2S.

These results of Sawicky and Schubersky are corroborated by Baumbach,† who obtains the active substance of the senna leaves through extraction with alcohol containing oxalic acid. From this extract he removes the excess of oxalic acid with lime, evaporates, dissolves again in some water, removes the lime still present with oxalic acid, and again evaporates to dryness. The brownish acid residue he designates cathartic acid. It was not obtained by him in a state of purity. On combustion, ash is left behind. Its fat and chlorophyll could be withdrawn with ether. As large a quantity as 0.9 gramme of this cathartic acid was required to exert an action on the intestinal tract.

Fudakowsky ‡ treats the alcoholic extract of senna with ether, whereupon a yellow inert substance passes into solution. The brown residue, on the other hand, proved active in a dose of 7.5 grammes, and the urine was colored red by alkalies. Fudakowsky also produced a calcium salt of the cathartic acid, which proved active in a dose of 0.9 gramme, the urine proving indifferent to alkalies.

Kubly § submits proof that the active portion of the senna is very readily soluble in water, and is of a colloidal nature. He further shows that the active constituent of the senna, as we have it before us in the drug, is insoluble in alcohol containing acid; he purposes to establish by a subsequent experiment that it is also insoluble in alcohol free of acid. He also reports that on boiling with bases, the stronger the base the more rapid the decomposition of the active substance.

For purposes of further experimentation, senna leaves were twice exhausted by him with boiling water, the extract evaporated, then mixed with an equal volume of alcohol, the resulting precipitate (consisting of mucilaginous matter and active salts) filtered off, the filtrate again evaporated to slight volume, and the decomposition with alcohol of 95° Tr. continued so long as a precipitate was deposited. One-half gramme of this precipitate (which adhered tenaciously to the walls of the vessel), being administered while still moist, produced two abundant liquid stools; after drying upon the water bath, however, it parted with a large part of its potency in this respect, and 0.7 gramme of the substance thus dried was required in order to produce a slight action. The precipitate was, further, dissolved in water, and the solution subjected to fractional precipitation, first with a neutral agent, then with basic lead acetate, and finally with ammonia. By thereupon decomposing the precipitates with sulphuretted hydrogen gas, and evaporating the filtrates, the first precipitating agent yielded a substance which possessed no cathartic properties whatever; on the other hand, the two other products, which were obtained in the form of brown, hygroscopic masses, soluble with difficulty in alcohol, proved active.

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* Meletemata de Sennæ Foliis. Dissert. Inaug., Dorpat, 1856.

† Quædam de Efficaci Fol. Sennæ et Rad. Rhei Substantia Disquisitiones. Dissert. Inaug., Dorpat, 1857.

* Quædam de Cort. Rhamni Frangulæ Disquisitiones nec non de Sennæ Foliis. Dissert. Inaug., Dorpat, 1857.

† Quædam de Efficaci Fol. Sennæ Substantia Disquisitiones. Dissert. Inaug., Dorpat, 1858.

‡ Disquisitiones Pharmacolog. de Senna. Diesert. Inaug., Dorpat, 1859.

§ Ueber das wirksame Princip und einige andere Bestandth. der Senna. Dorpat, 1865.

Kubly endeavored to produce these preparations, as well as the foregoing alcoholic precipitates, from a considerable quantity of senna leaves, according to the same method; the products when obtained, however, had completely lost their purgative properties. Hence he justly concludes that the active portion of the senna undergoes decomposition as a result of the tedious evaporation in the presence of atmospheric air, and thus he corroborates the view of his predecessors that the substance in question is very readily decomposable. Kubly then proceeded to the separation of the acid. The extract of senna prepared with heat he evaporated *in vacuo*, mixed the extract with an equal volume of absolute alcohol, filtered off the inert precipitate, and continued to mix the extract with absolute alcohol so long as a precipitate was deposited. This product, precipitating in the form of long brownish-yellow flakes, soon becoming black under the liquid, and clinging tenaciously to the bottom of the vessel, was washed out with 90° alcohol, and dried *in vacuo* over sulphuric acid. Of this product 0.5 to 0.6 gramme produced, after six to nine hours, two liquid stools accompanied with griping, the urine not being strikingly tinted. The ash of this substance contained carbonic acid, phosphoric acid, chlorine, calcium, magnesium, and alkalies. For purposes of further purification, Kubly subjects the precipitate to dialysis, after which operation the analysis of the ash revealed only calcium, magnesium, and phosphoric acid, whereas the outer liquid of the dialyzer contained alkalies, calcium, magnesium, sulphuric acid, and phosphoric acid.

Kubly then performed another purifying experiment with the above alcoholic precipitate. He dissolved it in water, dialyzed this solution for sixty hours, and precipitated the active substance with absolute alcohol in two fractions (N I and N II). Both precipitates soon became black even under the liquid; they were washed out with alcohol, and dried *in vacuo*. Of the first fraction, 0.55 gramme usually produced in twelve to fourteen hours after administration two liquid stools, accompanied with abdominal pain; of the N II, only 0.2 gramme was required for exerting the same action. This latter substance left behind on combustion 14.5038 per cent. of ash, in which Kubly determined the presence of 37.902 per cent. lime, 23.236 per cent. magnesium, and 7.203 per cent. phosphoric acid.

On adding HCl to the aqueous solutions of both masses, a brown precipitate was developed, which separated, as did also the filtrate, when boiled with concentrated HCl, into an insoluble yellow body (cathartogenic acid) and sugar, the presence of which was determined in the liquid with Fehling's solution. The above precipitate, obtained with cold dilute HCl, proved active; the urine was not tinted, and even on the addition of potassium the color reaction of the urine did not ensue; and thenceforward Kubly was always enabled to observe this characteristic of the substance or its decomposition product.

In the filtrate obtained from the latter precipitate, considerable quantities of the active principle remained in solution. By boiling with concentrated HCl, the above-mentioned decomposition product, which possessed no potency, was deposited.

Of the first alcoholic precipitate (N I) 0.6 gramme dissolved in water, precipitated as above with dilute HCl, and administered, proved inert, whilst the filtrate produced a liquid stool after the lapse of twelve hours.

The results of these investigations are explained by Kubly as follows: The active substance is a glucosidic acid, united with calcium and magnesium, capable of only partial precipitation with HCl, and decomposing when boiled with concentrated HCl into a resinous yellow matter and sugar. Kubly then proceeds to the production of that acid which he regards as definitively pure, and which he employed in all the following experiments.

As in the last process given, so also in this were the active salts separated out by precipitation with absolute alcohol, dissolved in water, again precipitated with absolute alcohol, and the aqueous solution of the precipitate mixed with HCl in two fractions.

The first precipitate, obtained with 60 drops of HCl, which was to contain any possible albuminates, exhibited a slight cathartic action. The purer acid was contained in the second fraction, which was obtained by the further addition of HCl. Of this substance, 0.3 gramme produced four liquid stools; the first occurred after the lapse of ten hours; 0.1 gramme acted twice after fourteen hours; on the other hand, an equivalent dose is stated to have acted after six hours when administered dissolved in carbonate of sodium. The action was accompanied with griping more or less severe.

For purposes of further purification, this acid is dissolved in hot alcohol of 60° Tr., and the filtered solution precipitated with ether. In order to obtain the cathartic acid still remaining dissolved in the hydrochloric acid liquid, Kubly subjects the latter to dialysis, neutralizes the remaining HCl with carbonate of sodium, acidulates freely with citric acid, evaporates to a slight volume, and again precipitates with HCl. Of this precipitate, 0.1 gramme produced two liquid stools.

The properties of the acid thus purified are described by Kubly as follows: Freshly precipitated, it is a brown amorphous mass, black when dried, and glistening when broken. It is readily soluble (developing a dark brown color) in alcohol of 40°–60° Tr., as also in caustic and carbonated alkalies, developing carbonic acid in the latter; it is almost insoluble in water and strong alcohol, and altogether insoluble in ether and chloroform.

It is precipitated from its solutions by inorganic acids, in a lesser measure by organic acids, and not at all by tannic acid. If an alcoholic solution be boiled with HCl or H_2SO_4, the yellow decomposition product (the cathartogenic acid) separates out, sugar being discoverable in the filtrate. If a solution of the acid be boiled for some length of time in alkalies, it parts with its cathartic properties, and on addition of HCl or H_2SO_4 the unmodified cathartic acid no longer separates out in the form of brown flakes: a black precipitate is developed, and sugar cannot be detected in the filtrate; on the other hand, a feeble odor of sulphuretted hydrogen is emitted. A neutral solution of the acid in ammonia is precipitated by silver nitrate, zinc chloride, mercuric chloride, copper sulphate, and acetate of lead. Heated on platinum, it puffs up and leaves behind a coal which burns with difficulty. Neither the acid nor any one of its combinations could be obtained in crystalline form. The minimum dose of this acid Kubly states to be 0.1 gramme.

The decomposition product of cathartic acid—cathartogenic acid—also possesses the character of a weak acid, and behaves toward reagents similarly to the cathartic acid. It likewise seems to possess, although in far less measure, cathartic properties; a dose of 0.3 gramme, according to Kubly, produced three stools within six hours. In both acids Kubly found N and S. Elementary analysis yielded for cathartic acid:

C	57.57	per cent.
H	5.12	"
O	34.96	"
N	1.50	"
S	0.85	"

Kubly accordingly calculates the formula to be: $C_{180}H_{96}O_{82}N_2S$.

So much with respect to the labors performed in Russia, and especially in Dorpat. In 1885, under the foremost pharmacologist of the present day, Schmiedeberg of Strassburg, R. Stockmann of Edinburgh entered upon a further investigation of the senna question, and published the results of his labors in two languages. We here follow the text of the publication revised by Schmiedeberg himself.* Stockmann obtained an N-bearing substance when he employed lead, calcium, copper, or sodium for the precipitation. He accordingly utilized baryta and resorted to the following method: He extracted the *fol. sennæ spiritu extracta* alternately with warm and cold alcohol containing H_2SO_4, and mixed the extract with hydrate of barium so long as a precipitate was formed. This baryta precipitate was stirred up with water, decomposed with carbonic acid gas, and filtered. The filtrate, as well as the residue on the filter, contained the active substance, and both were necessarily subjected to separate manipulation in order to obtain the cathartic acid. The residue on the filter, for this purpose, was decomposed with H_2SO_4, and the dark-yellow filtrate repeatedly shaken with ether in order to remove the coloring-matter formed as a result of previous decomposition of the cathartic acid. He then neutralized with lead oxide or lead carbonate under gentle heat; mixed with alcohol-ether until turbidity began to ensue; filtered, and precipitated out the cathartate of lead with a large quantity of the same precipitating agent; washed with alcohol, and dried *in vacuo* over H_2SO_4.

A portion of the cathartic acid again remains in the alcohol-ether, for the reason that the precipitated neutral cathartate of lead quickly decomposed into basic and non-precipitable acid salt.

As previously stated, large quantities of active substance remain in the filtrate, from the original baryta precipitate treated with carbonic acid. In order to obtain these, the liquid is treated with lead acetate; the resulting precipitate decomposed with H_2SO_4; the cathartic acid precipitated out from the filtrate with an excess of barium hydrate, washed out, and, as above, transformed into the lead or barium salt.

In a manner corresponding to the production of the lead combination, the barium salt is also obtained, by treating the liquid freed from coloring-matter with baryta in place of lead.

In this manner cathartic acid is obtained in the form of a salt; and Stockmann states at the outset that all the collateral products obtained in precipitates and filtrates must again be manipulated with a view to obtaining the cathartic acid in order to avoid appreciable losses of the latter.

Dried *in vacuo* over H_2SO_4, cathartate of lead is an amorphous, grayish-yellow preparation; the baryta salt is a firm mass presenting a black appearance on fracture, and triturated it yields a beautiful yellow-red powder. The neutral salts of the acid decompose, on treating with water, into acid and basic combinations, the former proving readily soluble, the latter—in accordance with the quantity of lead-content—sparingly or not soluble at all. Both salts, when perfectly pure, are said to be free from N and S.

Stockmann now decomposes these salts with H_2SO_4, and thus obtains in the filtrate the solution of the free cathartic acid, which is clear, possesses a yellowish-brown color, and on shaking with ether must not impart any coloring-matter to the latter so long as no decomposition has ensued. *This solution, neutralized with carbonate of*

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* *Arch. f. Exp. Path. u. Pharm.*, redig. von Schmiedeberg, etc., Bd. 19, p. 119.

sodium and administered to rabbits, produced within an hour violent diarrhœa, which persisted for several hours and finally terminated in death, as soon as a large dose was given. The urine, treated with potassium, developed the red coloration. The substance, however, proved altogether inert when injected subcutaneously into the rabbits, or directly into the blood. On boiling the above solution of cathartic acid or the solution of one of its salts with dilute mineral acids, we obtain a yellowish-brown decomposition product in which a black-colored body is admixed. It consists partially of the cathartogenic acid; the filtrate contains sugar which is not fermentable with beer-yeast and does not reduce Fehling's solution.

These decomposition products, a part of which may be withdrawn from the liquid by shaking with ether, Stockmann dissolves in a sodium-carbonate solution; precipitates them in turn by hydrochloric acid; dissolves the precipitate in alcohol; and obtains after the evaporation of the latter a brown amorphous mass insoluble in water and consisting of several bodies. By shaking with ether we can withdraw from this mass a yellow amorphous body, which can be further split up by boiling with acids.

Thus, in the decomposition of cathartic acid with dilute acids, Stockmann has obtained numerous products which are stated to prevent a distinct decomposition into sugar and the yellow coloring-matter; and he has found, besides, that the latter, when vigorously heated with concentrated acids, itself undergoes decomposition.

From a chemical point of view, Stockmann places cathartic acid beside the coloring-matter glucosides of rhubarb and frangula bark; the colored decomposition products, however, he ranges with the chrysarobin of the market. The latter on the ground that chrysarobin, after undergoing a certain treatment, imparts to ether in traces a green and red fluorescing coloring-matter very similar to chlorophyll; the former can at times, even under like conditions, be obtained from the decomposition products of cathartic acid.

At the conclusion of his study, Stockmann states that we need not ascribe the purgative action to the cathartic acid alone, but rather that these properties are possessed by all the anthracene derivatives (produced hitherto directly or obtained as products of decomposition from glucosides of the senna, frangula, and rhubarb) such as chrysophanic acid, emodin (frangula acid), as well as the intermediate decomposition products of cathartic acid such as the cathartogenic acid of Kubly. They all produced a certain irritation at the point of application, hence are purgative when reaching the intestine. The colloidal glucosides—such, for example, as cathartic acid—act with far greater energy, because they are absorbed with greater difficulty, and hence gain access to the more remote portions of the intestine. On account of the ready decomposibility of the cathartic acid, as also on account of the tendency to form a mixture of neutral and basic salts, Stockmann considers the analytical investigation of the acid to be very arduous. Finally, he summarizes the results of his labors in the statement that the cathartic acid permits of preparation in a state of complete purity, and represents a combination (free from N and S) of a yellow coloring-substance belonging to the anthracene derivatives, with a colloidal carbohydrate. Accordingly, the senna problem seemed to have been solved by Stockmann for all time, and only an analysis of the Stockmann substance was lacking. Let us now see what the firm of E. Merck, who are surely the peers of Mr. Stockmann in skill, have to say about cathartic acid in their *Jahresbericht* for 1891.

(*To be continued.*)

THE DISCOVERY OF ALCOHOL.*

BY BERTHELOT.

The name "alcohol," so far as it has been confined to the distillation products, is a modern one, and up to the end of the eighteenth century it signified any substance prepared by sublimation or very fine powdering. Hence, not only was our alcohol thus designated, but also powdered sulphate of antimony which was employed for blackening the eyelids, etc.

In the thirteenth and even in the fourteenth century, I find no author who applies the word to the distillation products of wine.

The term "spirits of wine," or fire-spirit—although much older—was also unknown in the thirteenth century; for the word "spirit" was then applied only to volatile substances capable of acting on metals and of modifying their colors and properties.

Passing to the designation "brandy"—"burned wine"—we meet it for the first time in Arnaud de Villeneuve, but it is not there used as a special name, but is applied to a product of assimilation, after partaking of the products of the distillation of wine, besides the Elixir of Long Life—which in those times bore the special name of "brandy."

Alcohol appears for the first time in science under the name of "fire- or burning-water."

The ancients had, as is well known, discovered that wine yielded a certain combustible element. Among others we may read in old Aristoteles: "Ordinary wine gives forth a slight vapor, hence there is flame." And likewise in Theophrastus, an indirect pupil of the foregoing, we read: "If wine be poured upon fire, as in the libations, it throws off a 'lustre.'" In Pliny there is a more reliable passage, which informs us that "the Falernian drawn in the Faustian wine-garden is the only wine which yields a flame." In truth this applies to all wines very rich in alcohol.

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* Translated by Joseph Helfman from *Apoth.-Ztg.*

A similar reference is found in the Latin manuscript 197 of the Munich Municipal Library, belonging to the twelfth or thirteenth century, in which it is stated: "One can place the wine in a vessel whose upper edge is somewhat raised, and which is provided with a cover perforated in the middle. When the wine has reached the boiling-point, if its vapor passes through the hole, apply a lighted taper, when the vapor will catch fire, and the flame will last as long as the vapor issues."

Despite this knowledge, however, alcohol was never isolated during the period of antiquity, although they may then have begun to understand how to condense several evaporating liquids. This may be inferred from the text of Aristoteles, in which it is stated: "Experience has taught us that sea-water converted into vapor is potable, and that the product of evaporation, once condensed, regenerates no more sea-water. Wine and all liquids, once evaporated, become water." Thus, ancient authors held that through evaporation the nature of the evaporated substance underwent modification.

These remarks obviously refer to the condensation of liquids heated in vases, the condensation occurring either on the surface of the cover (a process which, according to Dioscorides—in the first century of the Christian era—was employed for the condensation of quicksilver vapors), or in broad bottles, as described by Pliny in respect to the obtaining of turpentine. With regard to wine, however, scarcely an analogous passage can be found.

The real distillation apparatuses were invented in Egypt during the first centuries of the Christian era, and are described in a treatise by a female alchemist, Cleopatra by name. Through gradual transformations this led to the retort described by Synesius at the end of the fourth century.

Among the Greek alchemists there are no exact statements bearing on alcohol; and the Arabian writers also fail to mention it, so far as we have access to them through Latin translations.

The oldest text which speaks of it is possibly the following from the Munich Municipal Library, which comes after the treatise by Marcus Græcus, and may be quite as old as the latter. Here it is stated: "Fire water is prepared in the following manner: Take good old wine—no matter what the color—and distil it over a low fire from a well luted retort into a distillation-vessel. The distilled product is named 'fire water' or 'brandy' (burned wine). Its properties are as follows: It gives forth a large flame; when this is extinguished, the rag remains uninjured as before. If the finger be dipped into this water and lit, it burns like a candle, without injury. If a burning candle be dipped into this water, it not put out. It should be added that the water which first passes over is especially strong and inflammable; the last is useful in medicine, whilst with the first an excellent eye-water is prepared."

The first author known by name who spoke of alcohol is Arnaud de Villeneuve. He is ordinarily referred to as the discoverer of alcohol—a claim which he never made good; on the contrary, Arnaud de Villeneuve was always content with alluding to alcohol as a discovery made by some contemporary, which he highly admired. In one of his works, entitled "De Conservanda Juventute" (1309), he says, among other things: "Through distillation of wine or its ferment, the brandy is extracted, and this is the most volatile constituent of the wine." He further says: "Several moderns call this distillate of wine gold water, in consequence of the sublime character of its production, and its virtues are well known." Then all the diseases are enumerated which are cured by alcohol, and he continues: "It prolongs life, for which reason it deserves to be called the Water of Life. It should be stored in a golden vessel; all other vessels, excepting those made of glass, give ground for fearing alteration. On account of its simplicity, it absorbs all impressions of taste and odor, and other qualities. When mixed with essences of rosmarin and salbeis, it exerts a favorable action on the nervous system."

The pseudo "Raymond Lülle," a later writer than Arnaud de Villeneuve, speaks with exactly the same enthusiasm of alcohol, and describes the distillation of the fire-water which is extracted from the wine, as well as its sevenfold rectification when necessary, until the product burns off without leaving behind a trace of water. "It is called," he adds, "*vegetable quicksilver*."

From the latter term it is evident that the alchemists at the beginning of the fourteenth century were filled with such admiration for the discovery of alcohol that they placed it on the same plane with the "Elixir of Long Life" and the "Quicksilver of Philosophy."

Nevertheless we must guard against referring every text treating of this quicksilver or of this elixir to "alcohol."

The "Elixir of Life" is an old dream of the earlier Egyptians, its invention being accredited to the god Isis, and it being named by Diodorus (of Sicily) "Means of Immortality." Almost the whole of the mediæval world dreamed of this; at the same time it enjoyed the reputation of converting silver into gold.

Here we should note those passages occurring in the translations of certain Arabian works—ascribed sometimes to Rases and sometimes to the Arabian Aristoteles. There no reference to wine is made, but only the word "fermentari" employed, by which then was indicated every slow chemical reaction, and it states: "*Preparation of the simple water of life:* Take of the secret stone as much as desired; rub it until it is soft, and let it ferment a day and a night. Rectify the distilled water or its residue, and repeat these distillations three times. In several books nothing is said of again distilling the residue, but simply that it is sufficient to distil twice and it is ready. Then distil over a milk-white water. Store for use."

This passage is too obscure to permit anyone to tell accurately what substance is meant. In truth this has nothing to do with wine or brandy, but treats rather of a milky liquid, similar to the white water zosinnite which is derived from a polysulphide and colors metals superficially.

Many have supposed this to be the first mention of alcohol, but this view lacks support, and is probably based upon a confusion of the various meanings of the term "water of life."

AROMATIC SPIRIT OF AMMONIA.*

BY ADAM CONRATH.

The Pharmacopœia directs that the aromatic spirit of ammonia be made by adding the solution of the commercial carbonate of ammonium in water and ammonium hydrate to the alcoholic solution of the oils, and then to filter. It does not state that the solution be allowed sufficient time to convert the salt into a monocarbonate, so it might be supposed that with the solution the conversion was complete. When the operation is performed at ordinary temperature (70° F.) this does not appear to be the case, however; for when the solution, as soon as made, is added to the alcohol, a copious precipitate occurs, which redissolves in the course of many hours.

It appears that the framers of the official formula, for some reason or other, did not meet with this precipitation, or they would have allowed a certain time for resolution before directing the preparation to be filtered.

The result of a number of experiments made appears to indicate that about three hours are sufficient, at ordinary temperature, for a complete conversion of the commercial salt into the monocarbonate; for when the solution is allowed to stand that long, no immediate precipitate of bicarbonate is produced, or the amount is reduced to a minimum, when the same is added to the alcohol.

The commercial carbonate of ammonium and the water of ammonia used in the experiments which are hereinafter enumerated, met the requirements of the Pharmacopœia. The alclohol was of 94 per cent. The experiments were made at the temperature of the room, about 70° F.

No. 1.—The solution of the carbonate of ammonium in water and NH_3 was added to the alcohol as soon as made; a copious precipitate occurred. After standing twenty-four hours, shaking occasionally, a small portion of the precipitate remained undissolved; no more of this dissolved when the time was prolonged.

No. 2.—The solution of the carbonate, as under No. 1, was allowed to stand three hours and then gradually added to the alcohol, and the whole mixed by rotating the bottle. No precipitate was observable at first, but on close inspection minute crystals were seen floating in the liquid after a few moments. After standing twenty-four hours, precipitation, or probably better crystallization, was complete, the crystals adhering to the bottle. The quantity of bicarbonate thus crystallizing was practically the same as the quantity remaining undissolved under No. 1.

No. 3.—The solution of the bicarbonate was added to the alcohol after standing twenty-four hours, and after ten days with the same result as under No. 2.

No. 4.—The ammonium carbonate in fragments was dissolved in the prescribed amount of 10-per-cent. water of ammonia, which took about three hours, then the water and alcohol were added, the result being the same as under No. 2.

No. 5.—In making the solution of the carbonate the amount of water of ammonia was increased 25 per cent. and the water reduced correspondingly. This solution, added to the alcohol as soon as made, resulted as No. 1.

No. 6.—The solution as under No. 5, after standing three hours, and then mixing with the alcohol, resulted as No. 2.

No. 7.—Stronger water of ammonia was used in place of the 10-per-cent. When added to the alcohol, precipitation occurred, which completely redissolved in a couple of hours.

No. 8.—Solution as under No. 7 allowed to stand three hours, and then added to the alcohol; no precipitation whatever occurred.

From the results thus obtained it seems preferable to allow the aqueous solution to stand some time before adding the alcohol; the conversion of the salt thus certainly proceeds more rapidly than after being precipitated.

In the course of the experiments one-half dozen different samples of commercial carbonate were used, but no complete solution could be obtained with any. The insoluble portion was reduced to a minimum, however, with a lot that was picked out of a cask opened for the purpose. When alcohol of 92 per cent. was used with this specimen, the precipitate that first formed was completely redissolved, and when the solution was allowed to stand three hours before adding the alcohol, no precipitate formed.

The commercial carbonate of ammonium, when recently prepared, may probably furnish a preparation in which the precipitate will completely redissolve when made according to the Pharmacopœia, or in which no precipitation will occur if time for the conversion of the salt be permitted before adding the alcohol; but, with the article we generally meet with in commerce, incomplete solution is likely to be the rule.

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*Answer to Query No. 34. It has been reported that the precipitation in aromatic spirit of ammonia as prepared after the present official process can be prevented by permitting the solution of ammonium carbonate and ammonium hydrate in water to stand for some time before the alcoholic solution of the oils is added.

Experiments were also made with the bicarbonate of ammonium—which was obtained by precipitating the commercial carbonate with alcohol—which led to the belief that the same could with advantage be substituted for the commercial salt.

If the aromatic spirit of ammonia is to be continued in the next revision of the Pharmacopœia, a change in the present formula seems desirable in the interest of uniformity of the strength of the preparation.

As a prime article of the commercial carbonate is not always accessible to every pharmacist, the advisability of substituting the more staple bicarbonate, in devising a new formula, might be taken into consideration.

Milwaukee, Wis.

BOTANY AND MATERIA MEDICA.

SOME SUGGESTED EMENDATIONS IN BOTANICAL TERMINOLOGY.

As a definite step, rendering more uniform the terminology in use for cohorts, natural orders, sub-orders, and tribes, Mr. E. M. Holmes proposed at the last International Botanical Congress that the termination *ales* be uniformly adopted for cohorts, *aceæ* for natural orders, *inæ* for sub-orders, and *eæ* for tribes; utilizing names that have already been published, wherever possible, and where no suitable name has already appeared, employing the name of the principal natural order or genus of the group for the basis of the name. Further, in order to discriminate in print between specific names derived from vernacular names, proper names, and old generic names, he proposed (*a*) that all vernacular names used as specific names should be preceded and followed by an inverted comma, thus: Cestrum 'Parqui;' Diospyros 'Kaki;' (*b*) that the name of an old genus when used as a specfic name should be written in italics and spelt with a capital letter, thus: Rhamnus *Frangula;* (*c*) that all adjectival specific names derived from proper names should be spelt with a capital letter, thus: *Clematis Caripensis.*—*Pharmaceutical Journal and Transactions*, May 27, 1893.

POISONOUS PLANTS.

With regard to poisonous plants, Professor Brooks says: "It will possibly surprise many to learn that there are thirty-nine species of poisonous plants in the United States, either indigenous or naturalized—all of which are mentioned, in a recent work on medicinal plants, as now or formerly considered valuable in the treatment of disease. Yet in descriptions of patent medicines we read that 'it is entirely harmless, as it contains only vegetable substances.' It should be known that many of the most virulent poisons are of vegetable origin. Morphine, strychnine, aconite, and prussic acid may be cited as examples of vegetable poisons."—*Garden and Forest.*

Spongy Citrine Ointment.

H. E. W., Sandusky, O.—With due care in manipulation, there should be no difficulty in obtaining a satisfactory citrine ointment by following the U. S. P. instructions. There are, however, certain points at which the inexperienced operator may go astray. The secret of the process lies in the total conversion of the olein of the lard oil into elaidin by the action of nitric acid. Until the reaction is completed the ointment should not be removed from the source of heat; otherwise gas will continue to be evolved after the preparation is apparently finished, and a spongy ointment will be the result. Cooling the ointment too rapidly causes the same trouble, owing to the imprisonment of gas.

The presence of mercurous nitrate, due either to the use of insufficient nitric acid or to too high a degree of heat, affects the color, which should be a bright yellow. It seems almost unnecessary to add that no metal should be brought into contact with the ointment.

Copper Precipitated by Iron.

R. G. F., Detroit.—In dissolving copper sulphate in an iron vessel you have overlooked the fact that copper is thrown out of solution by metallic iron, hence the precipitate of metallic copper in the bottom of your container. The following metals also will precipitate metallic copper from solutions of copper salts: zinc, tin, lead, nickel, bismuth, cadmium, cobalt.

A good rule, therefore, to follow would be: Never to dissolve copper salts in any but a porcelain or glass vessel.

Phenol-Phthalein Solution.

Phenol-phthalein solution, for use as an indicator, is made by dissolving 1 part of the solid in 100 parts of 60-per-cent. alcohol. This yields a colorless solution, which is reddened by alkalies, and the red solution becomes again decolorized upon the addition of an acid.

Phenol-phthalein is formed by heating phenol and phthalic anhydride with some dehydrating agent, as sulphuric acid. The fused mass is dissolved in a solution of caustic soda, and the phenol-phthalein precipitated by the addition of an acid.

Cement for China.

The *Druggists' Circular and Chemical Gazette* offers the following as a "wrinkle worth trying": "Dissolve a little gum arabic in a little water, so that it is rather thick; put enough plaster-of-paris into this to make a thick paste. Cement pieces of broken china together, and in half an hour they cannot be broken in the same place. Hot water seems to make it firmer."

Liquor Sodii Arseniatis, Pearson.

Columbus, Chicago, Ill.—Solution arseniate of soda, Pearson, is official in the French Codex under the title of Soluté d'Arséniate de Soude. The National Formulary gives the formula for its preparation as follows:

	Parts.
Arseniate of sodium, crystals	1
Distilled water	q. s. ad 600

Or,

Solution arseniate of soda, U. S. P.	1
Distilled water	q. s. ad 10

Solution of arseniate of soda, U. S. P., is made by dissolving one part anhydrous sodium arseniate in ten parts of water, and is ten times the strength of Pearson's solution. In dispensing prescriptions the U. S. P. solution arseniate of soda should be supplied unless Pearson's is designated.

Chamomile.

A. E. G.—According to the nomenclature of the U. S. P., the simple term chamomile denotes the Roman chamomile (*Anthemis nobilis*, Linné), and not the German chamomile (*Matricaria chamomilla*, Linné).

Test for Tincture Strophanthus.

A. D.—Hartwick's test for tincture strophanthus depends upon the presence of strophanthin in the tincture, and is made by mixing 6 drops of the tincture with 1 drop of 10-per-cent. solution of ferric chloride and 6 drops of sulphuric acid. A brown precipitate is formed, which is distinctly green after one hour, and should retain this color for fully three hours.

Synthetic Guaiacol.

V. O. W.—According to the *Rép. de Pharm.*, March, 1893, synthetical guaiacol is prepared by Béhal and Choay as follows: Fifty-eight grammes of sodium are dissolved in 600 grammes methyl alcohol, to which are added 270 grammes of pyrocatechin, previously dissolved in methyl alcohol. The mixture is heated to 120°–130° C. with an excess of methyl iodide; allowed to cool, and the alcohol recovered by distillation. Treat the residue with sodium oxide, and agitate the sodic solution with ether to remove a small quantity of veratrol present. The guaiacol is liberated by means of hydrochloric acid, and then distilled. If the portion passing over at 205°–207° C. is cooled by means of methyl chloride, the product obtained in crystals consists of pure guaiacol. It is a white, well crystallized solid, fusible at 28.5° C., and boiling at 205° C.

Phosphates.

B. W. & Co., Vermont.—Liquid acid phosphates in combination with carbonated water and syrup has become a popular summer beverage. There are several ways of serving it, but one that gives general satisfaction is as follows: Place about one drachm liquid acid phosphates in a mineral-water glass, and add the syrup. Fill the glass nearly to the top with water from the "coarse stream;" mix thoroughly by pouring backward and forward from one glass to another, and serve in a holder. Orange, pineapple, and lemon are the most popular syrups to use in this drink.

Liquid acid phosphates of standard strength can be purchased of reputable manufacturers at a less cost than pharmacists can make it on a small scale. The following method for its manufacture is given by the National Formulary:

	Parts.
Bone ash, in fine powder	100
Sulphuric acid	78
Water	400

Mix the bone ash with one hundred parts of water, add the sulphuric acid diluted with two hundred parts of water, and mix thoroughly with a porcelain or glass stirrer. Now add the remainder of the water, and set the mixture aside for twenty-four hours, stirring occasionally. Then transfer the mixture to a strong muslin strainer, and subject this to a gradual pressure (avoiding contact with metals) so as to express as much of the liquid as possible. Lastly, filter through paper. The specific gravity of this solution is about 1.113 at 59° F.

Test for Artificial Honey.

Mac.—The following test is said to distinguish artificial from natural honey: Mix in a closed tube two drachms of the honey with six drachms of alcohol, and shake well. After standing a while, artificial honey will deposit a thick, white sediment (starch), which will not be the case with the genuine.

Weed-Killer.

Amateur Gardener.—We do not know the composition of the "weed-killer" about which you inquire. Common salt undoubtedly enters largely into its composition, as most weed-killers depend upon this substance for their efficacy. The Scientific American Cyclopedia of Receipts gives the following method for destroying weeds: "Boil the salt in water, 1 lb. to 1 gallon, and apply the mixture boiling hot with a watering-pot that has a spreading rose; this will keep weeds and worms away for two or three years. Put 1 lb. to the square yard the first year; afterward a weaker solution may be applied when required."

Eucalypteol.

"Eucalypteol" is the name which has been given to a di-hydrochlorate obtained by the action of hydrochloric acid upon eucalyptus oil. It appears to be cineol dihydrochlorate, for analysis shows that its formula is $C_{10}H_{16}.2HCl$. It is used in France as a bronchial stimulant as well as for its antiseptic properties.

LONDON LETTER.

The Imperial Institute—The Outlook of the Pharmaceutical Society—Commercial Strophanthus Seeds—The Portrait Gallery—Arrow Poisons—The Cocoa Scare—Arsenical and Other Insecticides—The Dangers of Hop-Picking—Storage of Carbolic Acid.

The official opening of the Imperial Institute, which was the occasion of several imposing ceremonies, has been the event of the month in scientific circles, and will no doubt not be without its bearing on the drug trade. Intended as a centre where the various members of a wide and scattered empire may meet when they will to confer, compare, and collaborate, it is only to be expected that the development of the natural resources of the colonies will bring to light many new drugs and raw products of interest to the chemist, as well as stimulate the plantation and cultivation of medicinal and other plants of utilitarian character. The collections of colonial produce that have already been amassed in the Institute are very numerous and varied, and valuable from an educational point of view, and the large proportion of chemists amongst the 800 Fellows is significant of the lines upon which advance will be made.

The annual meeting of the Pharmaceutical Society passed off without incident worthy of mention, with the exception that the veteran President, Michael Carteighe—who in his address dealt principally with the advances made in the administration of the Poisons Act, which were described by a member as "for the first time in the history of pharmacy placing us on a distinctly legal basis"—threw out strong hints with respect to the severance of his official connection with a Society supported by less than one-third of the trade. The annual dinner was enlivened by the presence of a number of medical, chemical, and other scientific celebrities, who all bore testimony to the high position maintained by the Society in the scientific world.

The great variety of strophanthus seeds in commerce is a source of constant perplexity to the pharmacographist, and is of practical importance in so far as careful microchemical examination has shown that the presence of strophanthin can only be detected in a few of the commercial varieties. Fortunately the green coloration of the glucoside with sulphuric acid is at present a sufficient test for the pharmacist, who is only concerned with the genuineness of the seeds containing strophanthin; but it is desirable that every effort should be made to clear up the confusion that exists as to the botanical sources of the commercial seeds, especially as follicles of different species are frequently present in the same sample, as well as to determine the nature of the constituents in the seeds from which strophanthin is absent. It is satisfactory to note that the botanical problem is being vigorously attacked by Mr. E. M. Holmes, who is carefully examining the rich collection of material at his disposal and taking up the ends of the tangled web in his characteristic systematic and masterly manner. He has also issued clear directions to collectors of strophanthus plants to be observed in the discrimination of species, and with these there should be no difficulty in identifying herbarium specimens.

En passant, reference must be made to the excellent portrait and life-sketch of the active Curator of the Pharmaceutical Society's Museum that appeared in the April number of the BULLETIN OF PHARMACY. Not only is the subject in this instance of peculiar interest to English readers, but it may be remarked that the whole series of articles is much appreciated as affording an opportunity of learning some details of the life-history and forming a judgment as to the appearance of living Continental workers whose names are household words amongst the pharmacists of this and other countries.

The examination of arrow-poisons for their active principles appears to be a very favorite branch of research to the pharmacologist at the present time. Prof. Fraser, of Edinburgh, and Dr. Tillie have just presented to the Royal Society the results of a pharmacological and physiological investigation of the active principles obtained from the wood of a species of Acokanthera, which constitutes the Wayika arrow-poison. A crystalline substance, with the probable formula $C_{30}H_{52}O_{14}$, has been isolated by the authors in the form of thin, colorless, needle-shaped crystals, that possess four times the lethal power of the arrow-poison. During the progress of the effects of the poison on the heart the inhibitory function of the vagus is retained and even increased, and diastolic arrest is apparently due to a direct action of the poison upon the motor ganglia and muscle of the heart. The principle differs from digitalin in its very slight action on the blood-vessels, and indeed reveals great resemblance to strophanthin.

A less complete physiological examination of Malayan arrow-poison has been carried out by Dr. Ralph Stockman. [See "Progress" department.]

Great excitement has been created in certain circles by the attack made in France upon the Van Houten Cocoa, as typical of the Dutch preparations, which on account of their cosmopolitan use may be fairly regarded as a subject of international interest. It is evident that the removal of 20 of the 50 per cent. of fat present in the raw cocoa cannot be regarded as a sophistication in view of the increased digestibility of the product thereby attained. The real point of contest consisted in the presence of a larger proportion of alkalies, above 3 per cent., in the prepared cocoa. If this alkali were present in the caustic condition, as at first suggested, it might indeed be regarded as detrimental to the health of the consumer; but the mass of scientific evidence went to disprove this, and it was generally assumed that the alkali was present as phosphate or as an organic salt. The attack, which signally failed, has been regarded by some as an attempt to force the disclosure of a secret process of manufacture.

In consequence of the appearance of caterpillars in alarming numbers in many orchards and fruit plantations, especially on apple and damson trees, a leaflet has been issued by the Board of Agriculture calling the attention of farmers to the advantages of syringing the affected trees with insecticides. The washes recommended consist of two classes, the first being mainly solutions of soft soap (6 lbs. to 100 gallons of water), to which quassia, hellebore, paraffin, or carbolic acid is added. A trial of the arsenical insecticides used extensively in the United States and Canada, but not generally adopted in this country on account of their poisonous qualities, is also urged, the two special substances selected being "Paris green" or "emerald green" (1 lb. to 200 gallons of water), and "London purple" (1 lb. to 180 gallons of water), for the application of which various "rose" jets are recommended and the necessary precautions given.

The cause of a special form of ophthalmia to which hop-pickers are liable, sometimes followed by keratitis, hypopyon, and much subsequent injury to the cornea and sight, has been a subject of inquiry by Dr. P. Adams. After considering the action of irritant substances used in the cultivation of hops, and the chemical constituents of the hop plant, Dr. Adams has come to the conclusion that the disease, the physical signs of which are primarily those of a mechanical irritant, can only be due to the impaction of the spinous hairs of the hop plant, which appendages it bears in common with other members of the Urticaceæ.

The persistent reddening of the whitest samples of carbolic acid is a troublesome character that has long been a source of annoyance to those who pride themselves upon the purity of their chemicals. This property, which was originally supposed to be due to the presence of cresols and other impurities, has now been conclusively shown to be characteristic of the pure article by comparison of preparations from different sources, the synthetical carbolic acid possessing the reddening power to an equal degree with that prepared direct from coal-tar and purified by repeated distillation. It therefore only remained to be determined under what conditions of storage the discoloration took place; and Dr. Kohn has made out that air and moisture together, but not individually, effect this, the action being accelerated by the presence of traces of metals and ammonia. Perfectly dry phenol, kept in well stoppered bottles, will remain colorless until brought into use, when, by repeated opening of the stopper, it will gradually redden owing to the oxidation effected by ordinary moist air; and no previous treatment of the phenol can obviate this result. The exact chemical nature and therapeutical action of the coloring matter has still to be ascertained, but the quantity in reddened phenol is so small that it is extremely unlikely that any ill effects will result from its presence.

BERLIN LETTER.

The International Medical Congress—The Position of Pharmacology—Science in the Preparation of Galenicals—Uricedin and its Synthesis—Chloralose—Are Hyoscine and Scopolamine Identical?—A Chemical Test for Blood—Disinfection by Steam.

After the cholera scare in Europe last year, it is satisfactory to learn that the stringent measures adopted to stamp out the disease have so far been successful that no return of the epidemic is anticipated this summer. In giving general expression to this opinion at a Government committee meeting, Virchow stated that at present Germany is completely free from cholera, and that even if sporadic cases should appear, there is no opportunity for its epidemic spread. No difficulty, therefore, presents itself from a hygienic point of view to the meeting of the International Medical Congress at Rome. And the German Scientists' Conference, which it will be remembered was abandoned last year at the last moment when the cholera scare was at its height, will be also definitely held this autumn in Nuremberg.

The development and scope of pharmacology was very clearly and tersely defined by Prof. Lappeiner at the recent inauguration festival of the pharmacological institute in Munich. Whilst the older materia medica could only acquire positive knowledge by clinical observations, and was, in fact, little more than a systematic arrangement of clinical experience, the present science is to a great extent an independent one, gathering material in its own domain and presenting it in a fruitful form both for theoretical and practical medicine. Modern pharmacology undertakes to inquire into the changes that are produced in the organism by chemical substances, thereby making valuable contributions to the advance of physiology. Thus the study of the cardiac poisons has given unexpected enlightenment on the physiological organization of the heart.

The study of bacterial toxines, which pharmacology has commenced to undertake in combination with bacteriology, also brings the former science into close contact with pathology and the questions of the nature and causes of infectious diseases. Consequently very close relations are also established with hygiene, and in scientific therapeutics pharmacology has become absolutely indispensable. Clinical observation can only teach whether the action of a drug in general produces an improvement in certain symptoms; pharmacology alone can deal with the question as to how the improvement has been brought about. The chemical isolation of active principles is an important aid in this task. Pharmacology must determine the action of old and new drugs by experiments on animals, and indicate the direction in which they may be applied, whilst the medical man can test the results of experiment and determine whether the conditions in the human organism, especially in the diseased organism, admit of their employment.

An instance of the manner in which apparently the most foreign sciences may have a bearing upon pharmacy is the recent application of van t'Hoff's physical theories of solution to the preparation of infusions and extracts of vegetable drugs. Oefele maintains that the presence of inorganic substances in the latter can in many cases, owing to dissociation changes, be detrimental to their therapeutical action, and advises their elimination by dialysis. Certainly it is evident that in the present competition between definite chemical products and galenical preparations, it is necessary that the latter should be brought to the highest pitch of perfection to maintain their position. Although chemically pure substances are more suited for therapeutical use in respect to their greater stability, yet the valuable combinations of organic compounds in drugs, which can only be retained in extracts and tinctures, make it advisable, in Oefele's opinion, to abide by such galenical preparations.

The custom prevalent in America of bringing forward mixtures of recognized medicaments under new names appears to be gaining a foot-hold also in this country. Recently a preparation of plant acids has been introduced under the name of Uricedin as a remedy against all forms of uric acid diathesis. Uricedin is, according to the patent, prepared from lime-juice to which sulphuric and hydrochloric acids are added in the proportions of 20 parts 95-per-cent. sulphuric acid and 4 parts 25-per-cent. hydrochloric acid to 50 parts anhydrous citric acid as estimated in the lime-juice. The whole is then neutralized with carbonate of soda until it possesses a slight acid reaction, and to this 1 part of lithium carbonate neutralized with lime-juice is added. The mixed solutions are evaporated to dryness, and the residue, consisting of the mixed sodium salts of citric, sulphuric, and hydrochloric acids, with about 1½ per cent. lithium salts, granulated.

The idea of administering the salts of vegetable acids in uric acid dyscrasia is not new. The ability of the organism to consume citrates of the alkalies to carbonates is also known, as well as the favorable influence of alkaline salts in the blood in producing decomposition and elimination of uric acid concrements; so that there does not appear much prospect that the introduction of uricedin will mark a fresh departure as a panacea for the specified evils.

The compound of chloral and grape-sugar recently introduced under the name of Chloralose, which has been examined physiologically by Hanriot and Richet, appears to be identical with a body prepared by Heffter in 1889. Two compounds are actually formed simutaneously, chloralose and parachloralose, only the former of which is active. Chloralose possesses a narcotic action on frogs, and its comparison with chloral hydrate is interesting, as the addition of the sugar molecule appears to alter and strengthen the chloral action in a peculiar manner. Experiments on rabbits show that chloralose influences neither the nerve centres nor the heart to any marked degree, but induces a paralysis of the respiratory organs; whilst chloral, it is well known, causes a constant depression of the blood-pressure in consequence of a paralysis of the vaso-motoric centre and a slowing of the heart's action.

The question of the identity of hyoscine and scopolamine, the alkaloid of *Scopolia atropoides*, has again been raised by a communication by Rählmann on the employment of the hydrochloride of scopolamine as a mydriatic. It will be remembered that Bender, who discovered the alkaloid, considered it identical with Ladenburg's hyoscine; and Ladenburg himself was the first to point out differences, which Schmidt confirmed by giving scopolamine the formula $C_{17}H_{21}NO_4$ instead of $C_{17}H_{21}NO_3$. At the same time it was shown that the commercial hyoscine used in medicine consisted principally of scopolamine salts, and Hesse even doubted the existence of hyoscine. Kobert could not distinguish any pharmacological difference in hyoscine and scopolamine, with the exception that the latter appeared to have a slightly stronger action. Rählmann now states that the mydriatic action of scopolamine is equal to that of hyoscine, but free from the by-effects of the latter, as well as of atropine, than which it is about five times stronger. One-tenth-per-cent. solutions of scopolamine are therefore equivalent to ½-per-cent. solutions of atropine, and its use does not disturb the appetite nor produce any dryness of the throat or nervous disturbance.

Although the spectroscope is an unerring instrument in the detection of blood, a good apparatus is not always at hand, and the want of an equally delicate chemical test, especially for the presence of blood in the contents of the stomach and intestines, is frequently felt. Deen's test, consisting in a blue coloration when blood and turpentine are added to a solution of guaiacum resin, is not applicable, because the normal stools as a rule give a positive reaction. Weber finds, however, that the disturbing constituents are excluded if the fæces or urine be first treated with a third of their volume of glacial acetic acid, and the acid solution shaken out with ether. Ten drops of guaiacum tincture and 20 drops turpentine added to the ethereal solution give a blue-violet coloration if blood is present, whilst the mixture remains reddish-brown (sometimes with a green tinge) in its absence. The reaction depends upon the ferruginous constituent of the blood, hæmatin.

As steam is now largely employed for disinfection purposes, the best physical conditions under which the disinfection can be carried out ought to be understood. Investigation has shown that it is preferable to conduct a current of steam downwards into the disinfection apparatus rather than to connect it directly with the evaporating surface, the object being to so saturate the atmosphere with steam as to displace the thin layer of air that is known to envelop all solid bodies. The bacterial spores, which possess great resistance to dry air, are thus brought into more intimate contact with the heated water vapor.

NEW YORK LETTER.

General depression during the past month has been the one marked feature in wholesale drug circles of this city. There have been more or less sales of leading articles at exceedingly low prices on the part of weak holders anxious to find money to meet the calls of the banks; but beyond deals of this character, business has been unusually light and unsatisfactory. The past week has been to some degree brighter than the early part of the month, owing to the easing up, even to a very trifling degree, of our stringent money market. Though dealers are disappointed with the outcome of the month, general hopefulness prevails. In my letter of last month I referred particularly to the continued decline in

Opium, tracing its cause not to any circumstances at the place of production, but to the anxiety on the part of weak holders to realize. During the past week there has been a slight reaction, and sales of considerable amount have been made, with a trifling advance in value. Reports from Turkey are more favorable than they were, and it is now believed that the crop will be at least an average one, giving us every reason to think that there can be no very decided advance above present ruling rates in this country.

Quinine has continued remarkably depressed. Very large transactions have been made, but in each case at lower and lower figures, until the bottom finally was reached. Within the past three days there has been a rally, and some 30,000 ounces sold at a slight advance over lowest prices. There really is no very good reason for the present low prices that prevail for this important drug, nor can these prices be continued when once the anxiety for money on the part of holders is removed. Druggists are perfectly safe to buy their quinine at once, in sufficient quantities to carry them over a considerable length of time.

Menthol continues in remarkably good demand, and prices are daily advancing, although it is not the season of the year to expect such. Reports from the place of production continue most favorable for higher prices, and importers are urged on the part of their friends abroad to show no anxiety to sell, as very much higher prices are to be expected.

Insect powder is in very active demand, but, in spite of the fact that the price of the flowers has continually advanced, the price for the powder has remained about stationary. This is due very largely to the fact that most large buyers of insect powder throughout the country have contracts already made for their season's supplies. For this reason, it is not an easy thing to advance prices in the market of origin.

Cubebs are very low and supplies very abundant—so much so that, in spite of the unusually active demand for this season of the year, the article has continued to decline in value.

Chamomile flowers, German, are in very light stock, and prices have very considerably advanced. We are advised that the crop of the present year will be a very short one, and, as these reports seem from time to time to be confirmed, there is but little doubt that the present high range of prices will be maintained throughout the year.

Asafœtida.—From abroad we are receiving constant advices of advance and of short supply. The article, so far as high grades are concerned, is not in abundant stock here, and prices have not been as high as they should have been to pay a reasonable profit to the importer. For this reason, it may be expected that during this present month decided advances will take place. No druggist could make any mistake in buying sufficient asafœtida to carry him throughout the entire season.

Camphor.—Reports concerning this article, from Japan, are to the effect that a backward season has very seriously checked the gathering of this gum, and seem to indicate that the supply will not be as abundant as usual. Therefore manufacturers are not anxious to sell, and there is every evidence that before long a general rise in price will take place.

Buchu leaves are becoming again scarce, and during the past week have advanced from two to three cents a pound. It is not easy to know the exact condition of the buchu market at the Cape, as most conflicting reports reach us. Prices are not now, however, abnormally high for prime leaves; and if the reports of shortage could be confirmed, the market would very quickly respond by advance in value.

Citric acid remains unchanged, owing, no doubt, to a very limited demand, which is certainly very surprising, as at this season of the year the consumptive demand should be exceedingly active.

Cod-Liver Oil, Norwegian.—This article is now being offered in this market at prices lower than it would cost to lay it down. In Norway, during the past month, an advance of $1 per barrel took place.

Celery Seed.—Considerable attention has been paid to celery seed within the past day or two, and it has been very largely bought up. Advices reach us from France that the present yield will be a very limited one. It is well known that the stocks held here and abroad are not large. Prices also are low; but as the time for its principal use is now about at hand, no one need feel surprised to suddenly find the article advancing very sharply.

Golden-seal root is in active demand, and has advanced about one cent or perhaps two cents a pound. There have not been many inquiries of late for export, but should they come in, the market will be found in a very bare condition.

Mandrake root has been entirely neglected. Prices are ruling low; stocks very abundant.

Senna.—Both the Tinnevelly and Alexandria holders are very much firmer in their views. Of common grades our market is very full, but of the higher grades there is not so much stock, and there is no reason why the present low prices should prevail longer.

New York City, June 13, 1893.

CHICAGO LETTER.

Events in Chicago are ample proof that the drift of commerce cannot be and is not stemmed by plans, organizations, and associations. Prince Bismarck is credited with the saying: "Germany cannot be unified by parliamentary debates; it takes blood and iron."

Our retail druggists sympathize with the Iron Prince indeed; cutting will not be stopped by parliamentary debates, long-winded resolutions, and lofty whereases—it takes blood and iron — and that means Union. Campaign plan, Tripartite plan, A. P. A. plan—these all contemplate a carried-out agreement between different bodies; and to hope for any result from that source after our experience, is Utopian. Do the carpenters and gasfitters make bargains with contractors? Most assuredly not! They know what they want—and they get it, because they are united.

If the druggists ever are united, and they ever find out what they want, they will get it; but it seems that the task of uniting them is as hopeless as it is thankless!

If there should arise a druggist Napoleon who would successfully unite the retail drug trade into one solid body that knew what it wanted, that Napoleon would probably never wield his well earned power, but be kicked to death; for no other body of men are such expert kickers as the retail druggists—and we all know why: the woods are too full of them.

The World's Fair is upon us, and the first month has resulted in several failures, among them Matkin Bros., the Northern Hotel Pharmacist, Bodo Uhlendorf. If you interview the retailers, the reply is that the Fair hurts them; it drove regular patrons out of flats and boarding-houses, and the foreigners and visitors that are here so far came to make, not to spend. You can hear the remark thirty times a day: "We could have better afforded to subscribe to the Fair in New York than have it come here." Rent, living, help, building material—everything—has gone up in price. If one man were responsible for bringing this curse upon Chicago, that one man would be wise to take a trip to Europe this year—his life would be in danger in Chicago. Some druggists were persuaded to subscribe from $50 to $500 to the Fair, and have had to pay for the past two years from $100 to $200 rent per month where they paid from $50 to $100 before, and their business is rather smaller than heavier.

The Leagues of the different States had their annual meeting on May 23d, and elected H. Canning, of Boston, President. The A. P. A. Plan was the topic of discussion, and renewed efforts will be made to have the action of the subcommittee set aside by the Convention of Proprietors and Jobbers at Detroit. Mr. Canning is very enthusiastic, and made a very encouraging report of awakened interest in Massachusetts and New York—while the other reports abounded in sympathy, resolutions, and hope, but lacked results.

The patent-medicine traffic has brought on this curse of cutting, and not before the patent-medicine curse itself is effectually eradicated can there be any hope of renovating pharmacy.

We had cheap talk and other chestnuts by the bushel. What we want now is action—firm, decisive strokes; and first and foremost, as Lincoln said, unity and self-knowledge. Let us first know whither we are drifting, and we shall soon know what to do and how to do it. The summer is full of congresses, and if there is anything to be hoped from them, now is the time to prove it. Where is our Napoleon to unite and lead our forces?

Let me close my epistle with a prize conundrum. I offer a ten-admissions ticket to the beauty show in the World's Fair for the best answer to this query: What will make association meetings really profitable to the majority of pharmacists? As it is, some attend with a view to "raise the standard," others for the purpose of raising the devil; but the leading question, how to raise a living, is not touched—and that is really what interests us all very much.

Old Liner.

PHARMACY IN ITALY.

A recent number of an English contemporary contains a good account of the present state of the pharmaceutical profession in sunny Italy, with special reference to the methods pursued in retail establishments. The writer says:

With reference to the diploma of "Farmacista," which corresponds to our Ph.G. degree, it is noted that it is necessary for the candidate to first pass the "baccellierato medio." The aspirant has next to follow university courses for three years in the sciences of physics, chemistry, botany, materia medica, and mineralogy, and then serve for one year in an authorized pharmacy. For the "Laurea in Chimica e Farmacia" he has to follow university courses for four years, including, in addition to the above, geology, zoology, quantitative analysis, and a thesis in some branch of the same, and then the year in an authorized pharmacy. While they have nine chairs altogether in the Naples School of Pharmacy, not one of them is devoted to pharmacy expressly—the nearest, perhaps, being the chairs of pharmaceutical and toxicological chemistry, and of materia medica, and toxicology, while many to our ideas, such as zoology, geology, and mineralogy, are only distantly related to the profession.

Practical Pharmacy.—As in France, prescriptions are written entirely in the vernacular, and the writing is, as a rule, execrable. Maximum prices are regulated by law, although medicines are almost invariably charged less than the legal tariff; and as the containers are generally brought by the patient, mixtures are dispensed in anything from a ginger-beer bottle to a bucket. Quinine is still sold at the old-fashioned price of 1 lira a gramme, and cutting is unknown, except that some of the semi-wholesale houses supply the public at reduced prices—and this is the ripple on the water that possibly portends the storm to come. In addition to the simples (of which there is a list in the Pharmacopœia), the sale of which is free to all, there is another list of more active remedies, the sale of which is free above a certain weight, which distinguishes the transaction as wholesale. Thus: Acid nitric, 100 grammes; cod-liver oil, 1,000 grammes; pot. iodid., 200 grammes; castor oil, 200 grammes; and about eighty other articles, are named. Quantities up to these limits may be supplied by pharmacists only.

A peculiar custom prevails in Naples regarding the dispensing of powders, which are very largely prescribed. The ingredients are not mixed, but each is divided on the spread papers, and even when an extract is the ingredient a proportional granule is dropped in each packet, and the whole wrapped up in an incredibly short space of time.

Infusions are invariably freshly prepared, and, when the strength is not specified on the prescription, are, according to the instructions of the Pharmacopœia, made 5 per cent.

Hypodermatic injections are very largely prescribed here, and are invariably prepared fresh and sterilized.

The Italian Pharmacopœia.—An excellent critique on the National Pharmacopœia appeared in your journal some time ago, and increasing familiarity with it confirms me in the opinion that your favorable review of it is well deserved. I have read several Italian pamphlets by more or less prominent pharmacists here criticising it, but they have little *raison d'etre* except the *cacoethes scribendi* and the desire of self-advertisement. I have yet to see one that has entailed experimental labor to correct melting or boiling points, or to suggest new tests or menstrua. The authors generally confine themselves to a sneering criticism of the table regulating the sale of drugs, or that of the substances that must be kept in every pharmacy. One pamphlet before me, of fifteen pages, devotes three pages only to the body of the book, mentioning only a distilled water, which the writer finds too strong, the ointment of almond oil, laudanum, Dover's powder, and oil of henbane. Among the preparations of the Pharmacopœia that differ sensibly from their English prototypes may be usefully mentioned the following:

Dover's powder is the original formula:

	Parts.
P. opii	1
P. ipecac	1
P. glycyrrh	1
Pot. nit	2
Pot. sulph.	2

Aq. amygd. amar. is titrated to 1 per cent. HCy.

Tinct. opii is tinturi tebaica. Laudanum is that of Sydenham, called vin. opii co.

Oleosaccarri are 1 essential oil to 20 sugar.

Acetato di ammonio—syn., mindererus spirit—corresponds nearly to our strong liquor, and is made with liq. ammon.

Acid. acetic. dil. is glacial acid 1, aq. 4, which is also the proportion for the other dilute acids.

Chamomiles are the flower-heads of *Matricaria Chamomilla*, although the Roman chamomile is also official.

Fel. bov. is official in crystals, prepared according to the formula of Platner.

Cannella, of course, stands for cinnamon.

Cinchona bark = 5 per cent. crystal alkaloid, 1½ per cent. quinine.

Ext. aconit. and bellad. are hydro-alcoholic root extracts.

Hoffman's anodyne is ether and alcohol equal parts.

Liq. ammon. camph. is ammonia 1, ol. camph. 4.

Ol. camphor. and ol. cantharid., 1 to 9.

Fowler's sol. is 1 per cent. without coloring matter.

Ol. hyoscyam. is made by adding an ammoniacal ethero-alcoholic tincture to oil and distilling off the volatile ingredients. Should show the presence of alkaloid with Meyer's reagent.

Syr. aperiens is the French sirop de cinque racines.

Tinct. iodidi is 1 to 12 without K_I.

Tinct. arnica: 1 each of flowers and root to 10 dil. alcohol.

Tinct. cinchon., benzoin syrup, myrrh, and rhei syrup, 1 to 5.

Tinct. canthar., digital., lobel., moschi., nuc. vom. and opii, 1 to 10.

Among articles little known in England but in daily demand here, the following are the principal:

Café di Ghiande is the roasted fruit of the oak, and is largely used as a tonic in infusion.

Sciroppo di pino is made from the distilled water of pinebuds.

Corallina is a small white coral, and is employed as a vermifuge in infusion.

Diagridium sulfuricum = resin of scammony.

Terrafoglia di tartaro = potas. acet.

Acqua vegeti minerale = liq. plumb. acet. dil.

Fango di sclafani is a sulphurous earth that is used for bath and lotions for skin diseases.

Sciroppo di Bignonia is made from the bark of the *Bignonia catalpa*, alterative.

Sciroppo di Jacea = syr. violæ tricol. (whole plant).

Sciroppo di Gelsemore = syr. mori.

Sciroppo di Cotogne = syr. pulpæ cydoniæ.

Sciroppo di Osmundii = syr. rad. Osmund. regalis.

Elixir alkermes is a red elixir of cinnamon, mace, cloves and nutmeg with cochineal, and of which a very popular syrup is prepared.

Tintura Lemery = tinct. ferri. pomat.

Coclearia is the plant of *Cochlearia officinalis.*—*American Druggist and Pharmaceutical Record*, June 15, 1893.

FINAL REPORT OF THE COMMITTEE ON PERMANENT ORGANIZATION OF THE PAN-AMERICAN MEDICAL CONGRESS.

Dr. Charles A. L. Reed, the distinguished chairman of the committee, presented at the recent meeting of the American Medical Association, Milwaukee, Wis., June 6th, the following facts:

Your committee appointed at Washington to effect a permanent organization of an inter-continental American medical congress, begs leave to submit its final report as follows:

An organization has been effected under the style and title of the Pan-American Medical Congress, to be held at the City of Washington, D.C., September the 5th, 6th, 7th and 8th, A.D. 1893, under the Presidency of Prof. Wm. Pepper, M.D., LL.D., of Philadelphia. The details of the organization are set forth in the published preliminary announcement of the Congress, copies of which are respectfully submitted herewith, in both English and Spanish, as a part of this report.

Since the publication of this preliminary announcement an organization has been effected in Paraguay. Your committee is therefore pleased to state that an organization of the Pan-American Medical Congress exists in every State and Territory of the United States, and in every remaining country and colony of the Americas, including the West Indies and Hawaii.

A provision has been adopted since the foregoing publication whereby every medical society, national, colonial and local, has been made a constituent organization of the Congress.

The committee begs leave to report further that the organization which has been effected as above has been and is now very actively engaged in carrying out the practical ends of the Congress.

The Senate and House of Representatives at the first session of the last Congress adopted a joint resolution, authorizing the President to extend an invitation to the Governments of the Western Hemisphere to send official delegates to the meeting, and to appoint similar delegates on behalf of our own Government. This official invitation has been issued through the Department of State, and all replies so far received have been in the nature of acceptances. The President has indicated that the Government of the United States will be represented at the Congress by six delegates. At the last meeting of the Executive Committee of the Congress a resolution was adopted directing that in view of the Columbian Exercises in progress in America this year, and in view of the relations which have become intimate between the United States and Spain, that the Government of the latter country be requested to send delegates to the Congress. It was thought that the exceptional relations of amity existing between the two countries would warrant a course which has been avoided with regard to all other European countries out of deference to the interests of the International Congress which is to meet in Rome.

The National Congress at its last session appropriated fifteen thousand dollars ($15,000) for the purposes of entertainment of the meeting.

The President of the United States has consented to open the Congress in person and to extend the courtesy of a reception at the White House to delegates and their families.

A special feature of the Congress will be the proceedings of the sections on Hygiene, Climatology and Demography, and on Marine and Hygiene and Quarantine. The proceedings of these sections will be largely of the nature of a sanitary conference with particular reference to practical questions of public health and of imminent importance.

With this object in view, every municipality of the three Americas, including the West Indies and Hawaii, has been invited to send an official delegate, and a very large number of acceptances have already been received.

The titles of several hundred papers, accompanied in many instances with abstracts, have already been received from representative medical writers in the English, Latin, French and Portuguese countries. This, of itself, assures the scientific success of the Congress.

Invitations have been extended to representative

European scientists to be the guests of the Congress, and a number of acceptances have been received.

In conclusion, your committee begs leave to express its appreciation of the spontaneous response to its appeal for funds in the form of advance registration fees from the public-spirited representatives of our profession in America. Let it be remembered, no registration fees will be accepted from members of the Congress residing outside the United States. Although money has been realized from advance registrations in amount sufficient to pay some of the preliminary expense of organization, a still larger sum is needed with which to meet accumulated obligations.

It should be held in mind that the Congressional appropriation, meager as it is, will be available only for purposes of entertainment at the time of meeting, and that the expense involved in publication, correspondence and clerical work is necessarily very heavy and must be met at once. The members of the profession are therefore again urgently requested to register at once by paying the fee ($10) to the treasurer, Dr. A. M. Owen, Evansville, Ind. Those who thus become members of the Congress but who may be prevented from attending the meeting will receive a set of the transactions, which, of themselves, promise to be worth more than the amount of the registration fee.

In submitting this, its final report, your committee begs leave to thank the Association and its executive officers for cordial support, and the medical press for its energetic and efficient aid in promoting this earnest movement for the unification of the medical profession of all the Americas.

WHERE ARE WE AT?

To the Editor of the BULLETIN OF PHARMACY:

DEAR SIR:—At the recent annual meeting of the Kentucky Pharmaceutical Association at Louisville, a paper was read on Substitution.

In the discussion which followed, the writer was dumbfounded at the number of visiting members who advocated this evil—for I can characterize it by no other name.

In considering this subject of substitution, the first question which presents itself is: "*Why does a physician specify?*" The only answer is: "*To procure a desired effect.*" Is it within the province of a druggist to place any other construction upon his duties to his physician-patron than to carry out, to the best of his ability, the instructions of said physician? Decidedly not.

Medicines are prescribed by intelligent physicians for effect, and unless they can get the effect desired the result is miserable and too often a fatal failure. A druggist has no more right to substitute one brand for another than he has to modify the dose on the same prescription. Take a fluid extract, for instance. It is important, in the first place, that the drugs from which it is made are intelligently selected and properly cured; the quality should be of the best and the quantity sufficient; then follows the method of treatment, which should be such as to result in a standard preparation, *i.e.*, one *liter* of the fluid should represent one *kilo* of the drug, or approximately, minim for grain.

Take normal liquid ergot, where of the commercial drug it requires from .95 to 1.35 parts to get one fluid part of normal ergot; we have here a finished product, the dose of which (5 to 20 minims) is expected to bring about certain results. Suppose a druggist, upon receiving a prescription for normal ergot, to be used in a case of severe hæmorrhage, possibly uterine, should substitute a cheap fluid ergot, as manufactured by Messrs. Quack, Slapp & Co., simply because that druggist "considered it just as good" (this "just as good" argument is the only one used by those who advocate substitution), would not that druggist be a party to a crime if fatal results should follow? When a prescription is sent to a druggist for a medicine of this kind, and he substitutes another brand or make, he is practicing a fraud which may prove disastrous, and the doctor who permits it is a party to the fraud.

Especially in cases of emergency do we see the baneful results of such practices, for it is then that delays and substitutions are most dangerous.

The Kentucky druggists should congratulate themselves that their home physicians have yet enough confidence in their honesty that the dispensing doctor is the exception and not the rule in their State. Just such an evil as this substitution, boldly practiced by many druggists in a sister State, has made that State a Mecca for those manufacturers who sell direct to the dispensing physician.

It is the duty of every druggist to fight this growing evil. The very word "substitution" has a cheap ring to it when spoken aloud.

After the Kentucky meeting, a visiting member remarked to the writer: "Every druggist should stand in his door with a shotgun ready to oust any agent of a manufacturing pharmacist whose mission it was to call upon and sample his local physicians." That druggist was one of the strongest and loudest advocates of substitution at the Kentucky meeting. That druggist, to my personal knowledge, has his shelves loaded with the cheapest trash he can buy in the way of pharmaceuticals. I also know his only reason for wanting to substitute is a mercenary one. His greed for gain alone prompts him to continually howl: "Doctor, please don't specify. Let me use my own judgment in filling your prescriptions." I am pleased to say he is far from being a representative druggist of the Blue-grass State.

When druggists understand that physicians permit substitutions, they will naturally become indifferent as to the class of drugs they buy, and their shelves will contain only the cheapest productions the market affords; the greed for gain will overcome their conscientious scruples; and the pharmaceutical pirates, such as some of the non-secret houses, which are scattered over the country (a disgrace to the profession of pharmacy), will find a ready market for their wares by claiming that their cheap substitutes "are just as good" as the original.

A reputable manufacturer markets a fine and scientific specialty after an outlay of hundreds of dollars in experimenting. Hot upon his track, however, appears the "non-secret" pirate with his imitation "cheaper, but just as good." Upon investigation, I find these imitators of legitimate pharmacy thrive mostly in those States where the physician, having tired of his druggist practicing substitution, does his own dispensing. To retaliate, the druggist commences to buy the non-secrets and attempts to counter-prescribe.

Physicians who are skilled in their profession and note the therapeutic effect of drugs, generally know that cheap drugs are always dearest. The scientific physician prescribes and specifies the best medicines, and those who do not are doctors as cheap as the drugs they would permit as a substitute. Let this evil of substitution once become prevalent, and the incentive to the production of therapeutical drugs of the highest grade and quality will fail to have its proper effect upon conscientious and progressive pharmacists; they will either cease to occupy the field of competition, or else drop into the manufacture of a low grade of products suitable only to cheap doctors and charlatans.

But as pharmacy has kept pace with progressive and scientific methods, the tide of advancement must go on, and those who stand in the way of the onward march will be swamped and relegated to the sloughs of obscurity.

Cheap drugs are dearest, dangerous, and most disappointing.

Those who are sick are ever ready to pay for quality in medicines, and the druggist who would substitute should be held responsible in law for his direliction of duty.

If "honesty is the best policy" in the general affairs of life, the force of the adage is certainly emphasized when applied to the choice of medicines in treating the "ills that flesh is heir to."

C. A. S.

Indianapolis, Ind., June 3, 1893.

IT IS PACKED, NOT BAKED.

Mr. P. L. Simmonds, F.L.S., writes to the editor of the BULLETIN calling his attention to the fact that on page 160 of the April number of this journal the word "baked" appears instead of "packed," in the paragraph treating of *Porphyra vulgaris*, written by Mr. Simmonds. The plant is dried, and then exported in the raw state.

CHEMISTRY OF DRUGS.

That chemical research is being carried on actively abroad, is evident from a *résumé* of investigations made.

In the London Research Laboratory, the substances yielded by the hydrolysis of pure aconitine have been studied by Dunstan in conjunction with J. C. Umney and Passmore. They found that no other bodies but aconine and benzoic acid are produced. They have succeeded in recombining these bodies to form anhydro-aconitine, thus partially synthesizing aconitine.

Ehrenberg and Purfurst state that they have obtained different results, and that the hydrolysis of aconitine proceeds in successive stages, with formation of picro-aconitine and napelline as intermediary products, as well as acetic acid, methyl alcohol, aconine, and benzoic acid.

E. Schmidt has proved that the principal base of scopola root has a composition different from that assigned by Ladenburg to hyoscine, and that it is not isomeric with atropine and hyoscyamine. This base is the principal constituent of commercial hyoscine salts.

Hesse, in a lengthy review of the solanaceous alkaloids, confirms Schmidt's observations, but he prefers to apply to the base the name of hyoscine instead of scopolamine, as proposed by Schmidt.

Ladenburg still maintains the accuracy of the formula originally assigned by him to hyoscine, and its isomerism with atropine.

In the seeds of *Datura alba*, Shimoyana and Koshima have found hyoscyamine with a small proportion of atropine, and Dymond has found the same base in lettuce.

The disputed identity of cytisine and ulexine has been further decided in the affirmative by Partheil. The base extracted by Greshoff from the seeds of *Sophora tomentosa*, and named by him sophorine, is probably also identical with cytisine, and this base may therefore be found in leguminous plants more frequently than is at present suspected.

The probable identity of the pungent principle of the fruits of *Capsicum annuum* with Thresh's capsaicin has received some support from the researches of Pabst.

Dunstan and Shepheard have produced chemical evidence that caffeine is identical with the base contained in tea.

Greshoff recommends carpaine, the alkaloid of *Carica papaya*, as a substitute for digitalis, and the rhizome of *Paris quadrifolia* has been suggested as a substitute for curare.

Leprince has isolated from *Cascara sagrada* a crystalline body, cascarine, which according to Phipson is identical with the rhamnoxanthin of *Rhamnus frangula*.

Thorpe and Miller have confirmed Schwabe's formula for frangulin.

From cusparia bark Beckurts and Nehring obtained four distinct bases.

The great variation in the proportion of emetine present in different grades of ipecacuanha has been pointed out by Cæsar and Lorenz; whilst Hooper shows that the stems and leaves of the ipecacuanha plant are not much inferior to the root in the percentage of alkaloid they contain.

Wallach has continued his investigations of the terpenes and has thrown much light on the composition of certain volatile and empyreumatic oils.

Various drugs from India have formed the subjects of communications by Stephenson, Dymock, Warden, Hooper, and Rideal, from the Straits Settlements by E. M. Holmes and Wray, and from Brazil by Dr. Peckoldt.

Interesting accounts have been given of vanillas by Beringer, of nutmegs by Warburg, and birch oil by Breisch.

Maiden has extended his observations on the turbid group of kinos, and describes an Australian kino from a tree belonging to the order Leguminosæ. He also reports upon an elemi, obtained in Australia from *Canarium Muelleri*, differing from the Manila Elemi of commerce.

Sarsaparilla has long been known to contain a principle allied to saponin; v. Schulz finds that no fewer than three such saponins are present in the root, all of which are toxic and appear to belong to the sapotoxin group.

Brooke and Ringer have compared false and genuine pareira brava chemically. Certain distinctions are detailed, and it would appear that the false cannot be advocated as an efficient substitute for the genuine.

E. M. Holmes finds confirmation of his opinion that the commercial Pernambuco jaborandi leaves are not derived from *P. pennatifolius;* from an examination of the flowers he considers the plant yielding them to be a new species, which he proposes to distinguish as *P. jaborandi*.

The plants yielding Bolivian, Peruvian, and Java coca leaves have been compared by Burck, who regards the first as the product of a distinct species (*E. bolivianum*), whilst the Peruvian and Javanese leaves are derived from varieties of *E. coca* (viz., var. *novogranatensis* and var. *Spruceanum*).

G. A. Shaw describes the results of a physical examination of specimens of granilla of Mexican origin, and throws light upon their composition.

Duncan and Tweedie report that commercial goa powder has not appreciably deteriorated in quality since its introduction.

Fiji ginger has been examined by Gane, who considers it unusually rich in gingerol and peculiarly aromatic.

The cinchona barks cultivated by Thompson near Bogota, and reported upon by Holmes, proved on the whole to be rich in alkaloid and in other respects of much interest.

A bale of senna consigned from Aden proved on examination to consist of the leaflets of *C. holosericea*, Fres., a drug seldom seen in the market.

A bark of lauraceous origin has been substituted for coto, a rhizome belonging to the Scitaminaceæ for hellebore, and the mystery attending the "false" cubebs has finally been solved by Treub.

A number of other investigations may be mentioned, the results of which have a more or less immediate bearing upon the practice of pharmacy. Thus, O. Hesse has obtained from *Aristolochia Argentina* a yellow crystallizable substance, to which he gave the name of aristin, and a base, to which he considered the name aristolochine might be applied more appropriately than to the impure bitter substance obtained by Chevallier from *Aristolochia serpentaria*.

H. W. Jayne has shown that the synthetic production of carbolic acid, besides being costly and tedious, is less likely to yield a pure product than the application of suitable methods of treatment to the acid derived from coal tar.

Bertram has shown how to obtain the two isomeric forms of vanillin.

Jahns has added further to his investigation of the bases of areca nut.

Merck and Hesse have put forward opposite views as to the nature of atropamine.

Ciamician and Silber have shown that commercial hydrocotoin contains a substance which they term protocotoin.

The chemistry of the glucosides from digitalis has been studied by Fouquet, and with more decisive results by Kiliani.

Knebel has shown that kola nuts contain a glucoside, by the breaking up of which caffeine is eliminated.

E. Schmidt's investigation of choline and neurine has thrown additional light upon the constitution of these bodies.

The chemical relations of myristicin have been ascertained by Semmler.

Knorr and Lederer have added to the knowledge of bodies related to analgesin.

Some new isomers of atropine and homatropine have been obtained by Liebermann and Limpach.

The bases of *lupinus albus* have been further examined by Siebert and Soldaini.

Acetyl fluoride has been studied by Meslans.

Absinthiin has been studied by O. Senger.

A new synthesis of tartaric acid has been pointed out by Genvresse.

The chemical nature of the acrid substance in ranunculaceous plants has been investigated by Beckurts, who has named it anemonin.

Tilden has shown how isoprene may be converted into a substance resembling india-rubber.

Battandier has found fumarine in the leaves of *Glaucium corniculatum*.

Peacock has investigated chimaphilin, a crystallizable body contained in *Chimaphilla umbellata.*

Hesse has shown that the volatile bases obtained in operating upon cinchona bark and coca leaves are probably derived from the oils used for extracting quinine and cocaine from those materials.

Several new synthetic bodies belonging to the sugar group have been obtained by E. Fischer, one of them belonging to the aromatic series.

Posth has shown that helenin is not the anhydride of alantic acid, but a lactone.

Hofmeister has studied the bases of *Lolium temulentum* and disputed some of the previous statements of Antze respecting them.

Messrs. Schimmel have described the chemical relations of pine oil as compared with ordinary turpentine, and Hirschsohn has shown that it contains borneol acetate.

The chemical nature of garlic and onion oils has been described by Semmler.

IMPORTS OF DRUGS, ETC., AT THE PORT OF NEW YORK, FOR THE MONTH OF MAY, 1893.

Aërated water, 445 bbls., 155 packages, 100 boxes, 35 cases.
Anise seed, 3 bales.
Arsenic, 1,774 sacks, 100 casks, 70 kegs, 2 bbls.
Acid, 20 casks, 9 cases, 6 demijohns.
Alkali, 42 tierces, 1 box.
Alizarin, 355 casks, 96 bbls., 1 case.
Aloes, 191 boxes, 185 cases, 10 kegs.
Albumin, 96 casks, 10 cases, 5 packages; blood albumin, 75 bags, 10 casks, 60 cases; egg albumin, 6 cases.
Anilin, crude, 26 drums; anilin salt, 281 casks, 303 cases, 85 bbls.; anilin oil, 225 cases, 29 drums, 10 casks.
Ammonia, 30 casks; carbonate of ammonia, 50 casks; muriate of ammonia, 50 casks; sulphate of ammonia, 685 bags; sal ammoniac, 96 casks; ammonia alkali, 376 casks.
Alumina, sulphate of, 61 casks, 2 kegs.
Asafœtida, 5 cases.
Bark, 108 bales, 5 packages.
Buchu, 7 bales; buchu leaves, 21 bales, 5 bags.
Balsam of Tolu, 24 cases.
Barium chloride, 46 casks.
Balsam of copaiba, 35 boxes, 10 cases, 8 bbls.
Boracic acid, 22 casks.
Borax, 13,071 sacks, 13 casks.
Chemicals, 1,407 casks, 576 cases, 222 bbls., 159 packages, 500 kegs, 11 demijohns, 8 drums; chemical preparations, 48 cases, 14 bbls.; chemical produce, 3 packages; chemical salts, 21 cases, 2 kegs.
Cocaine, 2 cases.
Camphor, 276 tubs, 2 casks; camphor oil, 350 cases.
Ceresine, 125 bags, 100 bales, 75 cases.
Cuttlefish bones, 75 straps, 40 cases, 10 packages.
Citric acid, 5 packages.
Coriander seed, 90 bags, 1 package.
Creolin, 40 packages, 20 demijohns.
Cardamoms, 28 cases.
Cubebs, 25 bags.
Cacao butter, 211 bags, 122 bales, 80 cases, 70 packages.
Chloroform, 2 cases.
Creasote, 201 casks.
Castor oil, 150 cases; castor seed, 2,284 bags.
Chloral hydrate, 10 cases.
Chlorate, 225 kegs, 50 casks.
Capsicum, 350 bags, 174 packages.
Cologne water, 12 cases.
Cod oil, 139 casks.
Cod-liver oil, 300 bbls., 2 cases.
Crystal carbonate, 890 bbls.
Carbolic acid, 160 bottles, 2 cases, 25 casks; solid carbolic acid, 95 casks, 80 drums.
Cassia, 1,000 mats, 100 cases; Saigon cassia, 377 cases, 100 boxes; cassia oil, 15 boxes, 15 packages; cassia buds, 50 cases; broken cassia, 1,000 bales.
Drugs, 277 packages, 122 cases, 91 bales, 6 casks.
Dried blood, 756 bags.
Eucalyptus oil, 1 case.
Essential oils, 220 cases, 125 boxes, 75 hhds.
Ether, 4 cases.
Fuller's earth, 2,922 bags, 5 casks, 500 sacks, 1 box.
Fish bladders, 5 cases; fish sounds, 14 bags.
Glycerin, 649 drums, 50 iron drums, 350 casks, 92 cases.
Galls, 38 bags; gall extract, 10 bbls.; gallnuts, 100 cases, 13 bags.
Hamburg tea, 100 cases.
Haarlem oil, 46 cases.
Herbs, 111 bales, 10 cases, 1 bbl.
Ipecac, 28 bales.
Iodine, 575 bbls.
Insect flowers, 70 bales; insect powder, 75 bbls.
Jalap, 10 bales, 8 bags.
Juniper berries, 100 bags.
Lanolin, 30 cases.
Leaves, 23 bales; medicinal leaves, 78 bales.
Leeches, 21 packages, 5 cases, 1 box.
Lime, citrate of, 114 casks; chloride of lime, 75 casks, 166 drums; phosphate of lime, 44 casks.
Liquorice, 532 packages, 172 cases; liquorice root, 27,874 bales, 28 sacks, 2 packages, 1 case; liquorice paste, 802 cases.
Medicine, 93 cases, 1 box; medicine syrup, 65 packages, 25 cases.
Mercury, 3 cases.
Malt extract, 4,007 cases, 24 casks.
Musk, 6 boxes.
Magnesia, 643 cases, 250 bbls., 25 casks.
Magnesite, 213 cases.
Myrbane salt, 50 cases, 24 casks.
Nitrate of strontia, 35 casks.
Natrium, 265 casks, 2 kegs.
Opium, 309 cases, 2 packages; opium and drugs, 29 cases.
Orris root, 12 bags.
Orange-flower water, 41 cases.
Oxalic acid, 60 casks.
Perfumery, 402 packages, 118 cases.
Potash, 264 casks; carbonate of potash, 40 casks; chlorate of potash, 1,901 kegs, 100 baskets, 100 packages, 40 casks, 15 drums; bichromate of potash, 80 casks; phosphate of potash, 6 cases; prussiate of potash, 37 casks; muriate of potash, 18,100 bags; sulphate of potash, 6,350 bags; potash crystals, 4 cases.
Phosphate, 5,002 bags; ground phosphate, 3,000 bags.
Phosphoric acid, 10 cases.
Pharmaceutical products, 12 cases.
Phosphorus, 110 cases.
Picric crystals, 20 packages.
Pepsin bitters, 105 cases.
Quinine, 167 cases.
Rose-water, 95 cases.
Rape oil, 140 bbls.
Resorcin, 20 casks.
Roots, 1,104 bales, 43 bags, 13 cases, 7 packages, 2 boxes; dry roots, 5 bales; roots and herbs, 16 bales, 14 sacks, 8 packages.
Sponges, 1,686 bales, 460 cases, 33 packages; refuse sponge, 7 bales; sponge clippings, 203 bales.
Senna, 524 bales, 14 packages; senna leaves, 2 bales.
Sarsaparilla, 162 bales, 6 packages.
Soda, 411 casks; bichromate of soda, 80 casks; chlorate of soda, 231 kegs; soda crystal; 140 casks; nitrate of soda, 57,482 bags, 3,589 tons, 3 casks; sulphate of soda, 27 casks; silicate of soda, 30 bbls.; phosphate of soda, 20 bbls; prussiate of soda, 12 bbls.; bicarbonate of soda, 310 kegs; soda salts, 300 kegs, 45 casks, 20 hhds., 2 cases.
Saccharin, 2 cases.
Splints, 54 cases.
Sulphurous acid, 12 cases.
Sulphide of zinc, 35 casks.
Tartar, 146 casks, 135 bags, 41 bbls.; tartaric acid, 1 case.
Tinctorial extract, 45 cases.
Yerba santa, 30 bags.

Pharmaceutical and Chemical Problems and Exercises in Metrology, Percentage and Proportion, Fortification, Dilution, Specific Weight, Thermometry, Chemical Formulas and Equations; including 900 chemical reactions, and other information. By Oscar Oldberg, Ph.D., Professor of Pharmacy, Northwestern University. Second Edition, revised and greatly enlarged. Published by the Apothecaries' Company, Chicago. 1892.

Seventeen hundred nuts to crack, which it must be a high satisfaction to be able to get the meat out of. The intention of this collection is to exercise the student in the mathematics and the technique of pharmacy. He will find here an array of problems he is expected to solve before getting his pharmaceutical sheepskin. It is a handy book for the student to have out of school, to show him the abysmal difference between conceit and knowledge. The Latin in the back of the book is calculated to supply the needs of those who want to study pharmacy for the sake of knowing the nature of drugs without being compelled to master all the intricacies of a dead language in order to do so. Take it all in all, we shouldn't be surprised to see a third edition of the book before long. Typographically it is elegantly done.

Impotence and Sexual Weakness in the Male and Female. By Edward Martin, A.M., M.D., Surgeon to the Howard Hospital; Clinical Professor of Genito-Urinary Surgery, University of Pennsylvania. Detroit: Geo. S. Davis, 1893. Price, in paper, 25 cents; in cloth, 50 cents.

This is a careful study of a subject which cannot be said to be fully understood by the medical profession as a class, and perhaps not even by specialists. Dr. Martin, however, is one of those from whom much light might reasonably be expected; a perusal of his book will prove that he has not belied the hopes which his eminent position has excited. If any excuse were needed for non-professional interest in a work of this kind, it is to be found in the fact that on the subject of sexual weakness and impotence modern quackery has thrust its lurid and pernicious literature under the noses of all persons in the community who are able to read. There is perhaps no other field of exploitation where pseudo-scientific vampires find so much gain as in this, because in no other is secrecy so certain to be preserved on the part of the victim while the claims of the "great discoverers" continue to be sown broadcast.

Dr. Martin divides impotence into three classes: organic, psychical, and atonic—the latter class being subdivided under the heads "irritative" and "paralytic." Each of these is fully characterized and carefully defined. The question of treatment is not dismissed with a dogmatic or stereotyped solution, but is treated with the qualifying considerations which arise in actual practice. The physician is not to skim lightly over the surface of his patient's complaint, either superciliously disregarding his symptoms—which may be largely psychical—or over-confidently accepting his statements, for, as the author says, "all venereal troubles seem to exert more or less of an inhibitory influence upon the truth centres, if such exist." He must treat local and general causes, and depend upon reducing rather than exciting sexual irritation, endeavoring to impart a healthy tone to the thoughts as well as to the physical constitution of the patient.

Eighteenth Annual Report of the Secretary of the State Board of Health of the State of Michigan. For the year ending June 30, 1890. By Authority. Lansing: Robert Smith & Co.

The personality of Dr. Baker is evident on every page of this rather belated but very valuable volume. The tardiness of the publication is, however, not one of the Secretary's traits; it is due to other causes. For the student of public health, nothing is more desirable than the details set forth with almost affectionate minuteness in this book. The assertion of the preventibility of disease by attention to certain invariable laws of nature, and by that means only, is the text from which Dr. Baker preaches. While there are, of course, a few people who perceive the truth and the importance of this text without reference to voluminous statistics to prove it, and while again there are other people who will not be convinced even by the statistical evidence, it remains true that the evidence is of immense practical value, and reduces the skeptic to absurd silence when it fails to convince him. One fact illustrated by this book is that neglect of public-health laws is not confined to the laity. For example: Dr. S. A. St. Amour, health officer of Cheboygan City, reported: "Thirty-five cases [scarlet fever] and two deaths in my jurisdiction; no disinfection; but few were isolated. No physician but one reported their cases; that physician and I were not to placard our cases and let others not reported go unplacarded—if this had been done, it would have brought hard feelings." Again: Dr. H. M. Gale, health officer of Bay City, wrote concerning scarlet fever in that city: "The board of health was satisfied that the case was scarlet fever, and that it was so considered by the attending physician, who willfully and carelessly neglected to send a proper notice to the sanitary officer. Since the decease of this child of Mrs. Trombley, scarlet fever has broken out in two adjoining houses, which have been directly traced from this family, and due to lack of proper steps having been taken for the prevention of the spread of this disease." It cannot be said that the doctors are entirely above personal considerations in the exercise of their professional duties; but until they become so, communicable diseases will continue to be communicated. An annual dose of cold facts such as this of the State Secretary of the Board of Health ought to arouse them, if only reflexly, through awakened popular indignation.

Physical Education.

This magazine for June (published at Springfield, Mass., $1.00 per year) is a number of unusual interest. An article on the "Gymnastic Treatment of the Feeble-minded" shows how, through the influence of exercise of muscle, it is possible to exercise and thus develop those parts of the brain that have to do with muscular contraction, and that thus, as well as in other ways described, the brain can be stimulated to develop.

That this is not mere theory is shown by the fact that Dr. Gulick, the writer, is describing simply what he has himself done, giving the reasons for it.

A continued article by Dr. Hitchcock of Cornell, and R. F. Nelligan of Amherst, is on "Wrestling," and consists mainly of illustrations taken from life, showing the various holds and breaks in the catch-as-catch-can style.

Besides these and major articles, there is much of minor interest.

Lessons in Physical Diagnosis. By Alfred L. Loomis, M.D., LL D., Professor of the Practice of Medicine and Pathology in the University of the City of New York. Tenth Edition, revised and enlarged. New York: Wm. Wood & Co. 1893.

What can a book reviewer add to the commendation contained in the words "tenth edition?" This perfectly printed and profusely illustrated text-book of physical diagnosis seems to be fully up to 1893. It contains 267 pages, without a superfluous sentence. Its recognition of the rôle of bacteriology is evidenced by colored plates of the bacilli of anthrax, typhoid fever, tuberculosis, actinomycosis, croupous pneumonia, gonorrhœa, and cholera. Among illustrated instrumental aids to diagnosis we notice a self-registering thermometer, Mathieu's dynamometer, Steveking's æsthesiometer, Liebreich's ophthalmoscope, and all the standard inventions of this branch of medical art.

Official Directory and Legislative Manual of the State of Michigan for 1893–4. By the Secretary of State. Lansing, 1893.

The State of Michigan, as it is in its local political elements and in its relation to the United States, is in this compact manual set forth with admirable fullness of detail. The State institutions are given in half-tone engravings, also the principal officers of State; and the whole mechanism of legislation, from inception to enforcement, with statistics of everything connected therewith, is placed at the finger-ends of all who are fortunate enough to get a copy of the book. Pharmacists are also citizens, and ought to know the main facts that this manual contains. Send to the Secretary of State, John W. Jochim, Lansing, for a copy.

Doctor: I think I'll prescribe wine for you, now that you are convalescent. If I were you, I would try the virtues of a good hock.

Patient (weakly): That's what I did to settle your last month's bill, Doctor!

"If your baby does not thrive on fresh milk, boil it."
"Oh, Doctor, you are too severe. Why not spank it?"
—*Life.*

"There's naught to make the sufferer grin,
In abscess, boil, or tumor,
Although physicians find therein
Considerable humor."

A CERTAIN CURE.—Young Man (helplessly): "Doctor, is there any cure for the liquor habit?"

Doctor (thoughtfully): "Y-e-s, one."

"What is it?"

"Marry a woman bigger than you are."

THE DEAD LANGUAGES.—Witticus: "Well, you doctors have to be pretty well versed in the dead languages, don't you?"

Medicus: "Oh, no; we leave that to the undertaker."—*Once a Week.*

He Died by Degrees.—Mrs. Mulcahey: "Shure, docther, and is it thrue that little Jimmy O'Toole bit yoore termomty in two and swallowed the mercury?"

Doctor: "Yes, my dear madam, it is; and the boy is dead."

Mrs. M.: "Shure, docther, an' it were a cold day for Jimmy, poor bye, whin the mercury went down."

Doctor: "Yes, madam, he died by degrees."—*Hot Springs Medical Journal.*

Not to be Put Off by Technicalities.—"I want this tooth pulled. I just can't stand this any longer."

"But, my dear sir, I am not a dentist."

"What in thunder are you?"

"I am an oculist. I attend to the eyes, not the teeth."

"Well, that's all right. Go to work. This is an eye tooth that's bothering me."—*Texas Siftings.*

AN IMPORTANT POINT.

Physician: Light but nourishin' food am what yo' system needs, Mistah Swoggles; you mus' buy a nice, fat chicken, an' eat a little of it br'iled.

Patient: Am it abs'lutely necessary foh me to *buy* de chicken, Doctah?

—*Puck.*

HALCYON REMINISCENCES.

(*Concluded.*)

A custom she had,
Which you all might call bad,
Was to send for a doctor in a hurry,
And if you came late,
You had better talk straight,
Or else there would be a small flurry,
For her tongue it was long,
And her voice it was strong.
And a giant would have called her a worry.

Another queer custom had Octavia Hayes;
'Twas to call at my office, on beautiful days,
And from noon-time till dark
She would sit there and talk
Of all the old ailments I had heard o'er and o'er;
It caused me to keep a strict watch on my door.

Our doctors did all in their power they could,
To allay her condition and do her some good;
We filled her with medicine and ordered her food.

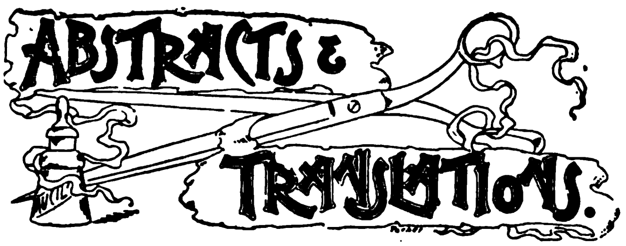
We blistered her back; at her rectum we whacked,
'Thout finding the lesion that ailed her;
We rubbed down her spine till the skin it did shine,
And all our kind service but failed her.

—*New York Medical Examiner.*

AS OTHERS SEE US.

Mr. Gill and I were talking
(He's a chemist, I'm a hatter);
Came a sobbing urchin walking
To the counter. "What's the matter?"
"Mother's ill; the doctor ordered
This prescription; please, sir, make it."
Mr. Gill mixed up a bottle,
Wrote upon it how to shake it,
Tied it carfully in paper
(For our chemist neat and nice is),
Gave it to the little urchin:
"One-and-three, my child, the price is."
Gone the boy—upon the counter
There was only threepence lying;
To the doorway rushed the chemist,
Hands outstretched, and coat-tails flying.
Mr. Gill is fat and heavy;
He came back all red and blowing:
"Little rascal, he has vanished,
Where he's gone to there's no knowing!
After all, I have the threepence
(In the till he went to drop it)—
Though I haven't got the *shilling*,
I have still got *twopence profit!*

—*New Zealand Journal.*



Ouabaio: Wabei or Wabajo Arrow-Poison.*

In the year 1882, some roots, stems, and leaves of the plant said to yield the ouabaio arrow-poison of the Somalis, were sent from Africa to France by M. Revoil. A chemical investigation of this material was made by M. Arnaud, who obtained from it a glucoside which he named ouabain. The physiological effect of the plant was determined by M. T. de Rochebrunne, and was found to be that of a cardiac poison. A botanical examination of the leaves by MM. Franchet and Poisson led those botanists to refer the plant to the genus Carissa, and to consider it to be nearly allied to *C. Schimperi*, A. DC. ("Prodromus," vol. viii, p. 675). These investigations were published in the form of a brochure entitled "Mission Revoil," by the Minister of Public Instruction in Paris, 1882.

Subsequently, in 1888, the active principle ouabain was examined in greater detail by M. Arnaud, its formula was ascertained, its analogy with strophanthin pointed out, and a method was published for obtaining it in a state of purity (*Compt. Rend.*, cvi, p. 1011). Its physiological effects were compared with those of strophanthin by M. Gley (*Comptes Rendus*, cvii, pp. 348–351), who arrived at the conclusion that ouabain produces effects similar to those of strophanthin, but that on small animals it acts more strongly and rapidly. He found that on some animals its action is twice, on others three times, and on others four times as strong as that of strophanthin.

The botanical source of ouabain has not yet been definitely settled. The plant was at first stated to be nearly allied to *Carissa Schimperi* (*Pharmaceutical Journal* [3], xviii, p. 902, 1888), but to differ from that species in having "the flowers arranged in small, dense cymes on a common peduncle 0.02 m. to 0.03 m. long" (*Comptes Rendus*, cvi, p. 1011). But there appears to have been some mistake in this statement, for M. Arnaud, who discovered ouabain, assured the writer in August, 1890, that the flowers had not been received. The same statement is made by M. Cathelineau, and it is further confirmed by MM. Franchet and Poisson, who examined the plant botanically. The last-named botanist suggested at the Congress at Oran in 1888 that as the plant had leaves very similar to those of *Carissa Schimperi*, and the flowers were unknown, it would be best to refer it provisionally to that genus and to name it *Carissa Ouabaio*. As *Carissa Schimperi* does not possess the spines characteristic of most species of Carissa, and is placed by modern botanists in the closely allied genus Acokanthera† (Bentham and Hooker, "Genera Plantarum," ii, pp. 695–6), M. Cathelineau ("L'Ouabaio," Paris, 1889, p. 9) has suggested the name *Acokanthera Ouabaio* for it, and this name has been subsequently adopted by M. Arnaud.

Professor Maxime Cornu refers the plant (*in literis*, 1890) to the genus Arduina, Mill, under the name of *Arduina Ouabaio.*

A careful microscopical examination of the ouabaio stem has been made by M. Cathelineau (*l. c.*, p. 19, 24), which shows that it possesses the structural pecularities characteristic of the species of the genus Acokanthera, viz., sclerogenous cells at the same time in the pith, pericycle, and liber (see Fig. A, 1, 2, 3). These have not been found in the genus Carissa, except in *C. Arduina*, Lam.

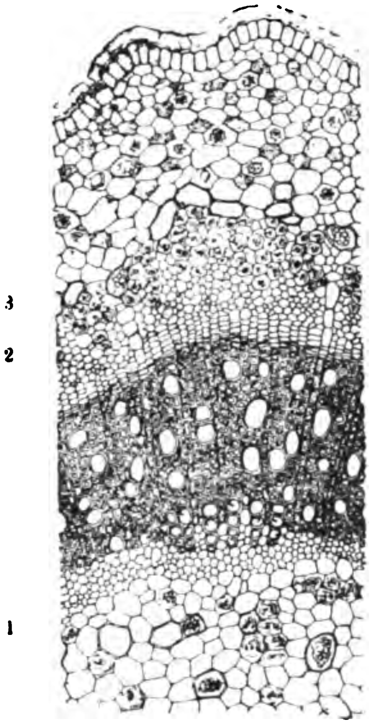


FIG. A.

Transverse section of Ouabaio stem, showing stone cells in pith (1), pericycle (2), and liber (3). (After Cathelineau.)

Some leaves of the plant from which M. Arnaud obtained ouabain were presented to the museum of this Society by Professor Maxime Cornu, in November, 1890.

A careful comparison of these leaves with those of M. Revoil's specimen of the ouabaio plant, and with the other species of Acokanthera in the Kew Herbarium, leads me to the conclusion that it bears, as stated by MM. Franchet and Poisson ("Mission Revoil"), a close resemblance to *Acokanthera Schimperi* (*Carissa Schimperi*, A.DC.). In this species the leaves have usually about six to nine pairs of lateral veins, and the veinlets are not prominent, but the leaves are frequently wrinkled, especially on the under surface.

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* By E. M. Holmes, F.L.S., in *Pharmaceutical Journal and Transactions*, May 27, 1893.

† In "Genera Plantarum" it is stated that the genus Acokanthera is chiefly distinguished from Carissa by the absence of spines, the erect, basifixed ovule, and the inflorescence consisting of dense subracemose axillary cymes, whilst in Carissa the inflorescence is terminal and dichotomous, and the flowers are stalked. Professor Baillon, however, holds that there are no well defined lines of demarcation between the two genera (*Bull. Mens. de la Soc. Linn. de Paris*, 1888, p. 755).

In *A. venenata*, Don., and *A. spectabilis*, Lond., the lateral veins are more numerous (about ten to fourteen pairs), and the veinlets are prominent, giving a reticulated appearance of the leaf, but in *A. spectabilis* the flowers are about twice as large as those of *A. venenata.*

The leaves of *A. Schimperi* are usually about 1½ inches long by 1 inch broad, and those of the other two species about 2½ inches long by 1½ inches broad, but the leaves of all three species vary exceedingly, both in size and form and character, even on the same branchlet, so that a variety of *A. venenata* has been described as a species (*Toxicophlæa Thunbergii*), and a variety of *A. Schimperi*, with hairy leaves and stems, has been considered to be a species by Schweinfurth, who named it *A. Deflersii*, whilst a second variety of the same species, with more luxuriant leaves, has been described under the name of *Carissa Mepte*, by Hochstetter.

It is interesting to find that the ouabaio plant had already been identified as the same species by the late Daniel Hanbury nearly forty years ago. In his collection of materia medica, presented to the Pharmaceutical Society by his brother, Thomas Hanbury, some years ago, there exists a specimen of leaves and root, received from Mr. J. M. Vaughan, and bearing the name of "Wabei." These specimens are evidently what are described under this name in the *Pharmaceutical Journal* [1], vol. xii, p. 269. Mr. Vaughan states that his specimens were obtained from a tree about 20 feet high, growing on the Habber Gerhagis range of the Gooleis Mountains in Somali Land. The poison was prepared by boiling the root in water until the decoction assumed the character of an extract. Mr. Hanbury showed the leaves to Mr. Kippist, at that time librarian to the Linnean Society, who suggested that they presented the aspect of apocynaceous leaves. Mr. Hanbury followed up the clue thus given and identified them as bearing an extremely close resemblance to the leaves of *Carissa Schimperi*, A.DC. ("Prod.," viii, p. 675), and figured by M. Richard ("Tentamen Fl. Abyssinica," vol. ii, tab. 68, p. 31), and to the specimens of *Strychnos Abyssinica*, Hochst., sent home by Schimper (No. 254), in the Herbarium of the British Museum.*

Another botanist may also claim precedence of M. Revoil in the notice and identification of the ouabaio plant. In 1875, the traveler Hildebrandt sent home specimens of a plant (No. 1431) collected in the Ahlgebirge Mountains, in Somali Land, at an altitude of 1000 to 1200 meters, for which he gives the vernacular name wabajo, evidently the same name as ouabaio but spelled differently. In fact, wabei represents the English, ouabaio the French, and wabajo the German pronunciation of the same word. Hildebrandt remarks that an arrow-poison is prepared by the Somalis from the juice of the root.

All these specimens agree in presenting the few lateral veins and wrinkled rather than reticulated surface, which seem to be characteristic of the leaves of *A. Schimperi.* It may therefore be concluded that the wabei, wabajo, or ouabaio arrow-poison is derived from *Acokanthera Schimperi.*

Attention has already been directed to the properties of ouabain in this journal (*Pharmaceutical Journal* [3], xix, p. 162, from *Comptes Rendus*, cvi, p. 1011), and it is not necessary to allude to it here further than to remark that the ouabain of commerce is now procured from the seed of *Strophanthus glaber*, Max Cornu, M.S., which has been found by M. Arnaud to yield it in a much larger quantity. From the stem and root of *Acokanthera Schimperi*, only three parts per mille were obtained, but from the seeds of *Strophanthus glaber* from 40 to 50 per mille. These seeds have been described and their structure illustrated by Dr. A. Blondel in "Les Strophanthus du Commerce," Paris, 1888, p. 36. They have also been identified as the Inée or Onayé seeds of the Gaboon, which are used as an arrow-poison by the Pahouins of that country. These seeds are brown, smooth and free from hairs, and are not twisted and pointed at both ends as in *Kickxia Africana.* As they are more poisonous than ordinary strophanthus seeds, care should be taken to observe that they are absent from the official article, with which they are sometimes mixed.

The characteristic features of the root of *Acokanthera Schimperi* do not appear to have been hitherto recorded in this journal. According to M. Cathelineau, the root occurs in pieces about ¾ inch to 1½ inches in diameter. It is of a greyish brown color externally, cracked longitudinally, and occasionally transversely also but in a less regular manner. The outer surface is soft and spongy, and easily abraded by the nail. Under a good lens, a transverse section of the bark is seen to consist of two well marked layers. The outer, owing to the cork cells penetrating the liber (see Fig. B, 1), is marked with a network of darker lines, the outer meshes having white dots representing the cut laticiferous vessels (2), and darker circular dots (3) consisting of bundles of sclerenchymatous cells.

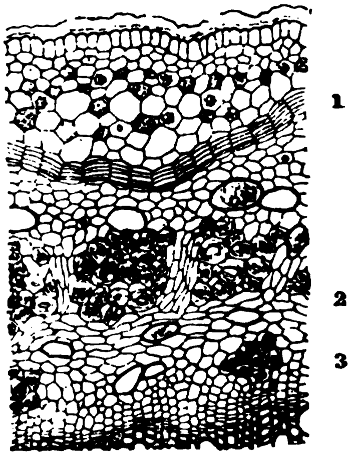

FIG. B.

Transverse section of root-bark of *Acokanthera Schimperi.* (After Cathelineau.)

The inner layer is seen as a definite line of denser tissue closely adherent to the wood, with numerous bundles of similar cells. The wood is yellowish white,

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***At that time the plant was supposed to belong to the genus Strychnos.**

tough, and minutely porous, with well marked but narrow medullary rays. The bark, macerated in water, gives a dark brown solution, with but little bitterness. The wood, however, possesses a very bitter taste. Ouabain, when pure, is stated to have no appreciable bitterness.

The Castor Bean in India.

CULTIVATION.

There are two chief forms of this plant (*Racinus communis*) to be met with in India, but under each of these there are numerous modifications in color and shape of leaves and presence or absence of spinous appendages on the fruit. These two great types have received various names, which denote, on the one hand, the size of the seed, and, on the other, the color of the stems, petioles, and leaves. The one form is a tall bush, or almost tree, a perennial grown as a hedge plant or to afford shade around fields in which more delicate crops are being cultivated; this yields a larger seed and an abundance of an inferior oil, which is generally expressed by a different process from that adopted with the other form. The second is an annual plant, sometimes grown as a pure crop, though more frequently in rows or lines through a field containing other crops. It produces a small seed, the better kinds of which, by an expensive or careful process, yield the superior qualities of the oil of commerce and of pharmacy. The oil obtained from the first is largely used in this country for illuminating purposes, and hence is often called lamp oil; but it also finds a place as a lubricating oil, and is used in many of the industries of Europe, where the more expensive article would prove an extravagance.

The manner of cultivating the castor-oil plant appears to be the same everywhere, but, since it varies in slight particulars, a description of the methods in use in both the presidencies of Madras and Bengal should be given. In Madras it is claimed that the best ground for its cultivation is red loam, that at the foot of hills being most in request, though it certainly grows well on alluvial earths. The land is plowed in May or June thrice with the ordinary native surface-scratching plow. A large flock of sheep is, if procurable, picketed on the field for a few nights; but if these cannot be obtained, twenty-four cart-loads of manure, equivalent to about eight tons, are applied to each acre. After the manuring the ground is again plowed twice. In July or August, after the first showers have fallen, sowing takes place. One plowman forms a furrow, and the man sowing follows and drops a seed into this at intervals of about a foot. A second plow follows the sower, covering the seed. From 16 to 24 pounds of seed are said to be required for an acre of land, though some claim that 12 or 14 pounds are sufficient.

In some cases where the large variety is grown, holes are dibbled with a heavy pointed stick some 1 or 1½ yards apart, into which two seeds are put, a little water poured, and the hole then filled up. In other instances a plow is driven along the field which has previously been well turned up. Behind this follows another plow, to the pole of which a hollow bamboo tube, with a perforated cocoanut-shell fixed to the top of it, is attached. A man walking alongside of this drops at every yard two seeds into the shell, which fall through the tube to the bottom of the furrow cut by the first plow and are then covered by the sowing plow.

The castor-bean crop is very seldom irrigated, but depends entirely upon what rain may fall. The seeds germinate in about a week, and a month after this the land is plowed twice or thrice to clear it of weeds and to thin it where it is too thick. At this stage the plant is not infrequently subject to the attacks of caterpillars, which are met by sprinkling with ashes and removing the insects by hand. In the fourth or fifth month after sowing the flowering occurs, and in the sixth the capsules are formed. The picking begins in the seventh month and terminates with the ninth, when the cattle eat off what leaves remain and the stems are cut for fuel. The seed pods are gathered by hand and are stacked in a corner of a house and covered with straw, a weight being placed on the heap to exclude the air. After a period of six days the capsules become soft and the envelopes rotten. They are then exposed to the sun for two days, and when thus dried are beaten with a heavy wooden mallet about 2 feet long and 1½ feet broad, which releases about half the seed. The remaining capsules are again dried, and the beating process is repeated, until the husking of the rest of the seed is completed.

The small species in this district is usually grown with other plants, being sown by driving a plow at pretty wide intervals over the field directly after the other crops have been put down. The seeds are sown about a yard apart. The out-turn of this plant is less than that of the large description, though its value is said to be 50 per cent. higher. The oil of the small kind only is, as a rule, used for medicinal purposes.

In most parts of India the varieties of the castor bean are described as two—the large and the small. Now and then five kinds are mentioned, but in the presidency of Bengal there seem to be three kinds that receive attention—the "Chunaki" (small in size), the "Gohuma" (middle-sized), and the "Jagia" (large-sized).

The method of sowing Chunaki castor seed is very simple, as no preparation of the land is necessary. Holes are made in the ground about 2 inches deep and 3 inches in diameter, one seed being put in each hole, and the holes being 3 or 4 feet apart. The seeds germinate and the young plants appear after a week. The crop does not require any further care. Small plots of land attached to the houses of the cultivators are used. The stems of the plants serve as supports for creeping vines. The poor classes of the people use the stems, which range from 10 to 12 feet in height, for thatching, and the leaves and oil are medicinally employed. The oil is used as a remedy for rheumatic pains, the rubbing of it on the affected part of the patient and the application of the leaves giving immediate relief. The Chunaki plants are allowed to stand for two or three years, the old stocks producing fruits earlier, but their seeds being inferior to those of the new. The fruit begins to ripen in November and December, and continues till March. When ripe it bursts, throwing the seeds to some distance. The bunches of fruit are plucked and placed in small trenches or tubes along with water or liquid dung. They are allowed to rot for two or three days, after which they are taken out and put in the sun. When dry they are crushed by hand or flat wooden mallets, and the seeds cleaned by winnowing. The seeds are bright black dotted with gray and have a hard shell.

The Gohuma variety of the castor bean is regarded as the best. It is extensively cultivated, and somewhat resembles wheat in color. It thrives best in loamy soil. The fields are well prepared, and the seeds are sown at the distance of 1 or 2 spans in furrows. The plants are watered once or twice when the soil becomes hard and when there is a means of irrigation, but the out-turn of the fields which have natural moisture is greater than that obtained from irrigated land. The banks of streams and rivers afford a crop superior in every way to the produce of other lands. The stem of the plant does not exceed 6 feet, and is about an inch in diameter. Gohuma is sown in November; its fruit begins to ripen in March and continues till April. It is harvested in the same manner as Chunaki.

Jagia is sown generally along with Indian corn in June or July before the rains set in. The ground is plowed two or three times, and the seeds dropped by a man or woman, one by one, 3 feet apart in the furrows made by a plow. When the sowing is finished, the fields are made even by the application of a flat timber. By this process all seeds are covered with earth, and the soil of the field retains moisture. The crop does not require any care until the fruit begins to ripen in February or March, when it is collected and the seeds prepared by the same process as is followed in the case of Chunaki. The seeds of the Jagia are of red color and a little flat.

The cost of cultivation, average out-turn, and net profit, vary greatly, doubtless owing to the care taken in plowing, manuring, watering, etc. The profit is also affected by the quality of the crop. As an illustration of this, the average products per acre of four districts in Bengal are herewith given:

District.	Cost of cultivation and collection.	Out-turn.	Net profit.
		Pounds.	
Moonghyr	$5.40	2,460	$12.00
Bhagulpur	1.18	697	7.50
Purneah	1.70	984	4.80
Maldah	6.00	2,460	8.10

In Shahabad district the out-turn per acre of the seed, when grown with other crops, is estimated at from 400 to 500 pounds. In Dacca, where the seed is sown in rows a little elevated from the general level of the field and a yard apart, each plant is said to yield from 20 to 25 pounds. In Kolhapur the average product per acre is 530 pounds, and in the Punjab there are said to be many acres each of which produces from 2,000 to 3,000 pounds of seed. A gentleman of wide experience says that from 500 to 700 pounds per acre would be a good average crop for India.

Statistics are not to be had showing the area annually occupied by the castor plant, but careful estimates would lead one to conclude that not less than 500,000 acres are devoted to its cultivation. The Indian consumption of the oil is very great, but of this there is no record.

EXTRACTING THE OIL.

In the Madras presidency there are three processes by which the oil is extracted:

(1) The seed is roasted in a pot, pounded in a mortar, and placed in four times its volume of water, which is kept boiling. The mixture is then frequently stirred with a wooden spoon. After a time the pot is removed from the fire, and the oil skimmed off. The residue is then allowed to cool, and next day is again boiled and skimmed. The oil thus procured is superior to that first obtained, and is kept separate.

(2) The seed is first boiled, and then dried in the sun for two or three days. It is then pounded, and the further process is as in the first method.

(3) The seed is soaked for a night in water, and next morning ground in the ordinary native oil mill. The oil is removed by putting the pulp into a piece of cloth and then squeezing the oil into a pot. This oil is used for lamps and dyeing purposes.

Experiments were made at the Government farm at Saidapet for the purpose of ascertaining the relative merits of the various methods of expressing castor oil. The quantity of beans operated upon in each case was 100 pounds. In experiment No. 1 the oil was cold drawn, the seed being crushed in a screw press with horizontal rollers, and the resulting pulp put in gunnies and pressed. In experiment No. 2, which was divided into A and B, extraction was effected by the ordinary native process of roasting and pounding the seed and boiling the result in water, the oil being skimmed off as it rose. The difference in results betwen A and B was chiefly caused by the overroasting of the beans in the former. In experiment No. 3 the ordinary native mill was employed, and the oil, after the pulp had been well pressed, was boiled. The oil obtained in No. 1 experiment is stated to have been very pure, but in the others it was dirty. The following statement exhibits the out-turn in each experiment:

Description.	No. 1.	No. 2.		No. 3.
		A.	B.	
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*
Oil	36.5	27	32	30.43
Cake	36.8	(*)	(*)	43.48
Husk and wastage	26.7	(*)	(*)	26.09
Total	100	.....	....	100

It will be observed that the yield of oil obtained by cold drawing was considerably larger than that by the other process. The general native estimate of the yield of castor oil is 25 per cent. on the quantity of beans used. The experiments at the Government farm were conducted under European supervision, and were carefully carried out, which will account for the increase in yield.

(*To be continued.*)

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* Not determined.

Analytic Notes on Commercial Cod-Liver Oil Emulsions.*

The excellence of an emulsion of cod-liver oil depends, of course, upon the proportion of oil present and upon the perfection of the emulsification. The latter condition may be roughly estimated by the facility with which the oil separates on standing, but the proportion present can only be determined by analytic methods. Since these preparations are extensively employed by physicians, it seemed to be of interest to determine the strength of commercial varieties, some of which make definite claims as to quality. The analytic investigations here noted were carried out by the most approved methods for fat-extraction, as applied in milk-analysis. The samples were obtained from a wholesale house and in the original packages. Care was taken to mix each sample thoroughly before making the analysis.

Brand.	Per cent. of oil claimed.	Per cent. of oil found (by volume).	Remarks.
"Williams's emulsion of cod-liver oil with hypophosphite of lime.".....	50	49 9	
"Phillips's palatable emulsion of cod-liver oil".......	50	49 5	Pancreatized.
"Scott's emulsion of pure cod-liver oil.".................	50	49.5	
"Hydroleine."......	66.6	44 2	Pancreatized; contains salicylic alcohol.
"Maltine with cod-liver oil."..	80	85.9	Much maltose.
"Baker's emulsion of cod-liver oil with hypophosphites..............	50	10 7	
Ditto (second sample)........	50	18.0	
"Baker's pure cod-liver oil with extract of malt.".....	....	8.4	Much maltose.
"Wilber's pure cod-liver oil and phosphates."...	....	37.3	
"Wampole's perfected and tasteless preparation of cod-liver oil."............	"the curative agents from 25 per cent. pure Norwegian cod-liver oil."	None.	14 per cent. alcohol.

The sample (Wampole's) last named is accompanied by a circular stating that "the oil in this preparation is in positive solution," and also a certificate from a professional chemist to the following effect: "I have examined the sample which you sent me, marked Wampole's perfected and tasteless solution containing the essential curative agents of cod-liver oil, and I find that it contains combined phosphorus in several forms, and the peculiar principles of wild cherry bark, and it also carries an amount of combined iodine such as is found in a volume of cod-liver oil equal to 25 per cent. of the solution; that is, one tablespoonful of the mixture carries the amount of combined iodine found in a teaspoonful of cod-liver oil." The sample analyzed by us contains 14 per cent. of alcohol and no appreciable amount of iodine.

It is not inopportune to discuss briefly some of the chemical questions relating to the therapeutic value of cod liver oil. It is probable that the modern knowledge of causation and nature of phthisis, recognizing it as definitely due to a specific germ, will modify materially the therapeutic importance of such a substance as cod-liver oil, but incidental to the supposed especial nourishing function of the fatty matter it has often been suggested that some accessory ingredients may be of value. For instance, iodine has often received credit, but it has been known for a long time that the proportion of this element is extremely minute, ranging from 0.001 to 0.004 per cent. It is evidently impossible to attribute the medicinal value of the oil to the traces of iodine present, unless we are willing to accept the absurd doctrine of infinitesimals. The proportion of iodine in dried cod-fish and in herring is considerably greater than in the oil.

Theoretic considerations would lead to the view that the best emulsions are those made with pancreatin, in association with the least possible quantity of gum, glycerol, or sugar. The presence of any considerable amount of the more easily fermentable sugars, such as maltose or glucose, must be regarded as objectionable. The presence of salicylic acid and of notable proportions of alcohol will be still more serious, for, as we have elsewhere shown, the former interferes decidedly with the action of the pancreatic ferment, and the latter should certainly not be employed except under specific and regulated conditions of dosage. Thus "hydroleine," an otherwise satisfactory emulsion (although not found to contain the amount of oil indicated in the published formula), is objectionable from the presence of salicylic acid; and in the Wampole preparation we have, in addition to the fact that it contains no appreciable amount of oil, the presence of 14 per cent. of alcohol as a most serious drawback to its use.

Pharmacy and the Drug Business in Peru.

United States Consul Dougherty, writing from Callao on American-Peruvian trade, *inter alia*, has the following concerning pharmacy and the drug business in our sister republic.

The cities of Lima, Callao, and Arequipa are well supplied with drug stores kept by Germans, French, English, and Italians; and, all other things being equal, the proprietors will naturally trade with their respective countries. The inequalities as to credits and freights are an added influence against the growth of trade in this line with the United States. I have not seen a drug store kept by an American in either of these cities, nor even an American employed in a drug store. There are some American specialities which can be found in almost any of these stores. The trade in drugs and medicines with our country will increase only when an effort is made to introduce our most salable products by the same studious and painstaking methods pursued by the merchants of other countries. Many could be put upon the market at once, even with the disadvantages of freights and credits to contend against, if the proper effort was made. I find in the report of the commission of 1885 that many dealers here advised against the use of the traveling man, alleging that goods were often sold by sample and the shipment failed to reach the standard of the quality of the sample. To obviate that difficulty, goods might be sent on commission to the best and most reliable houses until their quality is tested. There are still other ways, but this matter will be referred to hereafter. It is a matter of almost daily occurrence to find people who have become acquainted with some of our products in this line asking for them at the drug stores, and I have been often asked if it were possible to procure certain American medicines in Peru.

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* Henry Leffmann, M.D., and William Beam, M.D., of Philadelphia, in *Medical News*, May 21, 1892.

The following are the imports for the years 1890 and 1891, the latest published data, in values fixed by the tariff for levying duties—not the actual value, which is far in excess of this, I am assured, and not invoice values:

	Soles.
England	13,000
Germany	11,000
Italy	9,000
France	6,000
United States	1,800

Among the medicines and goods in this line there were imported from the United States the following: Medical oils, antipyrin, collodion, barks, magnesia, lozenges, powders, roots, soda, tinctures, vaselin, food for children, cholagogue, elixirs, emulsions, ergotin, corn cures, essences, phosphates, syrups, pain-killer, homœopathic remedies, caustics, medical pastes, porous plasters, medical pearls, pills, quick relief, gold remedy, seidlitz powders, ointments, wines, and sarsaparilla.

Peruvian law does not permit the practice of medicine by those who have not diplomas from institutions of the allopathic school, and, although there are a few practitioners of the homœopathic faith, and with increasing patronage from the best classes, the regular medical college of Lima has taken measures to put an embargo upon the practice. One of the leading physicians of this school is considering the advisability of removing to the United States. The move on the part of the college referred to may interfere seriously with the trade in homœopathic medicines.

The druggists whom I have interviewed say that the drug merchants of the United States have never made a special effort to extend trade here, nor have any inducements been offered to dealers here so far as I can learn.—*National Druggist*, April 15, 1893.

Indigenous Drugs of India.*

Convolvulus Arvensis, Linn., called variously Palindi, Chhatrika, Dronpushpi Harankhari, and Sesai Dudhi.

It would not be out of place to give here a short botanical note of this weed, widely distributed throughout India in all kinds of soils, and so useful in the economy as to be extolled by *Vaids* and *Hakims* and in Hindu books on medicine for its expectorant, diaphoretic, antifebrile, antibilious, and vermicidal properties. The fresh plant is used as fodder for cows, sheep, goats, and buffaloes, to fatten them and to enrich and increase their milk.

BOTANICAL NOTES.—This convolvulaceous plant grows as a troublesome weed all over India. In marshy and inundated soils it is an annual, but in dry and sandy soils it is perennial. It blooms in spring and again in autumn. Every lawn or meadow, and even the roadside, is decorated with this profusely flowering and trailing plant.

Root, single, central, very tenacious and strong; the component fibres very strong; color usually pale yellow, becoming reddish-brown when dried.

Stem, green, woody, usually rising from the central root-head, with a trailing and climbing habit (dextroclimbing); not many branches.

Leaves, exstipulate, petiolate, alternate, smooth, acuminate, hastate or sagittate, the lobes at the base often much prolonged, giving it the shape of an isosceles triangle with the angle at the base rounded.

Inflorescence.—Flower pentamerous, single and axillary, caducous and hypogynous. *Sepals*, 5 hypogynous, clawed, and foliaceous, dotted with oil glands. *Petals*, 5 hypogynous, rosaceous, imbricate, white or pale-rose colored. *Stamens*, 5 long, epipetalous, filaments thready, anthers extrorse. Pollen profuse and granular. *Pistil* superior, five-carpeled, stigma sessile, and five-lobed, exuding very sticky fluid, attractive to ants. *Ovary*, five-lobed, superior, dehescence septicidal, seeds numerous, small testa corrugated; amphitropal, exalbuminous, cotyledon leafy.

All parts yield a milky juice when crushed. The flowers and buds are poor in milky fluid; the leaves and stems are rich in it. Medicinally all parts are used. The fresh plant is more useful than the dried one.

I tried a hot decoction of this plant in seventeen cases of fever, where much thirst was complained of, and the skin hot and dry. I found it to be an excellent diaphoretic and diuretic, though in some it excited expectoration, but its expectorant property was much less marked. I detail below an illustrative case in which its effects were fully noted:

Sandah, æt. 35 years, Kharwal farmer, admitted on the 14th October, 1892, for fever and extreme weakness, with the following history and symptoms: The man had been suffering from fever (tertian ague) for two months, and had enlarged spleen. He was pale and emaciated, could hardly stir, and was carried on a bed to our hospital on the 14th October.

Symptoms noted on admission: Skin pale yellow, having a waxy look; liver normal; spleen enlarged to the umbilical space, and encroaching upon the right hypochondrium; hilus distinctly felt with every act of breathing; pulse weak and intermittent; heart irritable; no heart or lung disease traceable; bowels costive; appetite lost; sweetish taste in the mouth; body warm; slow fever; maintained temperature 100°; a slight exacerbation in the evening, and the patient more irritable at night.

Treatment.—The patient could not bear stimulants or quinine, and owing to caste prejudice he objected to take English fluid medicines. Warm decoction of this plant was given him in 2 ℥ doses, six times a day, with rice and dal diet. This treatment was continued till 20th October, 1892, when the man apparently looked well. Skin changed color, appetite returned, but he was very weak. Spleen much diminished in size, but the fever had never left him. Under the use of this plant, the skin soon lost its dryness and waxy appearance, and the patient often voided large quantities of urine. On the 21st October he was given quinine gr. v. twice a day; this cut short the fever, and it was continued till 29th, when he was discharged as sufficiently recovered for ordinary purposes, but he attended till 6th November.

Observations.—I used this plant in seventeen cases, and found it to possess a slight stimulant effect; and indeed where strong stimulants and alcoholics cannot be used, this plant may be used with impunity. In all the cases, under its use, flesh was gained soon, and I may ascribe to it some tonic property.

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*By R. P. Banerjee, B.A., G.B.M.S.L., Pachbadra, Rajputana.

I hope practitioners in general, who have to deal with the poorer classes of patients, who are usually much starved, will make use of this plant for their benefit.

Under its use I noticed a steady fall of temperature lasting a few minutes. It excited perspiration without weakening the patient; thirst was diminished; urine was increased in quantity. Patients gained flesh under its use, and I should say it is a good tonic and diaphoretic and suited to much-weakened constitutions.—*Indian Medical Record*, January, 1893.

The Most Successful Method of Conducting a Retail Drug Store.

It is a very hard matter to tell anyone how to conduct his or their store, as circumstances and location have to govern. In this age, when money rules, we, of course, consider no one successful that is not so financially. A few general and practical hints will not fall amiss.

"Cleanliness is next to godliness;" therefore do not fail to keep your store neat and clean. A customer should never leave your establishment without getting what he wants, even though you have to purchase it from your neighbor at retail price, thereby holding your trade and keeping them from going elsewhere. Politeness costs nothing and will bring you trade. Do not treat one customer with indifference and another with lavish attention; for, though the one may be dressed in homespun and the other in silk, yet his quarter is as good as the other, provided it has no hole in it, or is not counterfeit.

Your prescription department should be conducted with conscience and honesty, never practicing substitution or using the cheapest drugs and chemicals instead of the best.

To your doctors be polite and attentive, but do not lead them to believe you cannot do business without their favor—a belief that a great many have, and in consequence of which they, to a great extent, are inclined to be domineering. If you are attentive, polite, and an accomplished pharmacist, no doctor or doctors can do you much harm.

All that I have written is necessary to make a success of your business; yet more is necessary.

"Buying is half of selling." Buy the best as cheap as you can, but never allow yourself to purchase more than you can use and promptly pay for. Your cash discount is your first profit, and bills discounted are better than money in the bank. Your expenses should be constantly watched, and always kept within a certain limit, or percentage of your sales. A great mistake made by a great many pharmacists—and I am sorry to have to say it—is, they buy at a price above what they could manufacture themselves, a great many preparations frequently unreliable. Make everything you can, and then you can testify to constituents and reliability.—G. W. Heyer in *Registered Pharmacist.*

The Microscope in Pharmacy.

It has been but a comparatively few years since the microscope was considered not much more than an expensive luxury or a mere toy. A few scientists who were peering into the invisible things of nature (whose work few could comprehend) were using it intelligently, but outside of this range of scientific workers few understood its value. What a debt we owe to the men of science who study it for its own sake, regardless of its practical applications! The microscope is an outgrowth of the scientific study of nature, and when we apply it in practice we are constantly reminded of the debt we owe the men of pure science for its existence.

We read a great deal to-day in current medical and pharmaceutical literature of the microscope in pharmacy, and this, however limited, is a sphere of usefulness and of much importance to the public. The pharmacist, if he be well informed as to all the recent methods of investigation, of the means of protection to himself and the public against adulterations, must know the value of this physical instrument. A branch of microscope research especially interesting to pharmacists is the examination of powders. Many drugs when reduced to a fine state of division lose all their physical characteristics and become unrecognizable to the ordinary vision. The microscope here proves a valuable assistant in the detection of the true nature of the object under investigation.

As an example of this, the cases of senna and digitalis might be mentioned. These two drugs in the powdered state resemble each other so closely that an ordinary examination reveals no appreciable difference in their appearance. Serious results have occurred from accidental substitution of one for the other. But if they be subjected to microscopical examination, elements of difference may be easily discovered. Perhaps the best point of distinction is the hairs occurring upon the leaves. If a sample of powdered digitalis be appropriately mounted on a slide and examined under a one-fifth objective, numerous fragments of hairs will be found mixed with the débris. These, it will be noticed, are *multicellular*. Under the same conditions senna, on the contrary, exhibits *unicellular* hairs. Here, then, we have a ready, convenient, and accurate method for establishing the identity of these powders.

This is but one example of numerous cases wherein the microscope would prove a valuable assistant to the pharmacist in his daily work, and he who has not the aid of a good microscope stands seriously in his own light.

Within the past few weeks I have had occasion to examine the market supply of buckwheat flour in the State of Kansas. The result of my investigations will be found in the report of the State Board of Agriculture. It is gratifying to know that there appears to be no mineral (earthy) adulterations in the flour. A microscopic examination reveals the fact that the two principal admixtures are wheat and corn flour, the former often in small proportion. In one case the flour examined contained so little buckwheat that the characteristic starch granules of that grain were scarcely visible. It appeared to be a mixture of corn and wheat flour, containing a small quantity of buckwheat.—Prof. L. E. Sayre, in *New England Druggist*, June, 1893.

CASCARIN AND RHAMNOXANTHIN.—According to M. Phipson, the yellow crystalline substance obtained by Leprince from the bark of *Rhamnus Purshiana* is identical with that from *Rhamnus Frangula*. The two substances have the same chemcal formula, the same molecular composition, and the same characters. Buchner extracted rhamnoxanthin from the latter tree as early as 1853.—*Rép. de Pharm.*, October, 1892.

THE "wood of ipecacuanha" question has entered upon another phase by the publication of an analytical certificate, prominently displayed in a London drug-broker's office, declaring the woody stem of Brazilian ipecacuanha to contain about 80 per cent. by weight of the average quantity of the emetine present in sound commercial ipecacuanha root. The subject occasioned an animated discussion at the drug sales this week.—*Chemist and Druggist*, May 27, 1893.

PHEDURETIN, A NEW ANODYNE AND DIURETIC.—Pheduretin is described by J. Orient, Csetnek (Hungary), in *Gyógysz Kozl*, as consisting of small white needles. Its chemical composition has not yet been definitely ascertained. The author's animal experiments show that pheduretin dissolves readily in the stomach, and reaches the blood in a short time. Large doses of it are said to act on the central nerve system and to cause strong secretions of urine. It has proved efficient, it is claimed, against migraine, and as a powerful diuretic. The dose is stated as being of 0 5–1 gramme (7½ to 15 grains), twice daily. More definite therapeutic data are promised shortly.

TO MEASURE DENSITIES.—An instrument for measuring densities of liquids, which for simplicity can hardly be surpassed, is described by A. Handl in the *Wiener Berichte*. It consists of two glass tubes joined by an India-rubber tube. One of them is 30 centimeters long and about 1 centimeter wide, and bears two marks scratched into the glass at a distance of 20 centimeters. This tube is immersed up to the lower mark in the liquid to be examined. Meanwhile the other tube is totally immersed in water. On pulling out the tubes, the liquids rise until that in the first tube reaches the second mark. The height of the water-column, read off on a suitable scale, measures the density of the liquid.

SALOCOLL, A NEW ANTIPYRETIC.—Under the name of Salocoll, a phenocoll salicylate has recently been introduced which is said not to produce the untoward by-effects observed with the hydrochlorate of phenocoll. Salocoll has a sweetish taste and is much less soluble in water than the hydrochlorate of phenocoll, for which reason its absorption in the organism is impaired, and, it is reasoned, by-effects are not produced; in all other respects it is similar to the older salt. Salocoll is recommended as a reliable and mild antipyretic, antineuralgic, and antirheumatic, in doses of from 1 to 2 grammes (15–30 grains) several times a day, in powder form; it is also considered well-nigh a specific against influenza.—*Rundschau*, 1893, No. 12.

PSEUDOHYOSCYAMINE, a new alkaloid from *Duboisia myoporoides*, was separated from chloroform solution by addition of ether after first removing hyoscyamine and hyoscine as perfectly as possible by crystallization; the new alkaloid is lævogyre and forms small yellowish needles melting at 133–134° C., difficultly soluble in water and ether, easily soluble in alcohol and chloroform; it has the formula $C_{17}H_{23}NO_3$; the aurochloride melts at 176° C., the picrate at 220° C., while the platinochloride sinters at 116° and decomposes at 150°. By boiling with baryta a base isomeric but not identical with tropine and pseudotropine was obtained (the reddish-yellow platinochloride which it forms at 210° C. becomes deeper in color and at higher temperature blackens without melting) along with tropic acid.—E. Merck, *Arch. der Pharm.*, 1893, 110–123 (*American Journal of Pharmacy*, June, 1893).

CHLORALOXIMES.—Under this generic name a number of compounds are being prepared by a German firm with a view to their application for medicinal purposes. The formation of these bodies is shown by the following equation:

$$\mathrm{H{:}NOH+CCl_3COH = CCl_3}\left\{\begin{array}{l}\mathrm{H}\\ \mathrm{COH}\\ \mathrm{ON{=}H}\end{array}\right.$$

The chloraloximes are obtained by the action of chloral upon the oxime in a suitable solvent. Compounds of this kind have been prepared from acetoxim, camphoroxim, acetaldoxim, benzaldoxim, nitroso-β-naphthol; they are readily soluble in alcohol and ether, and can be recrystallized from petroleum spirit. In water they are less readily soluble, and when the solutions are heated the chloral is converted into hydrate.—*Zeitschr. d. Œsterr. Apoth. Vereins* (*Pharmaceutical Journal and Transactions*, April 1, 1893).

PURIFYING WATER CHEMICALLY.—That permanganate of potash has a power of oxidizing is very well known and daily put to use in detecting and estimating the amount of organic matter contained in a sample of water. The process consists in letting fall drop by drop a certain solution of this salt into the water under examination, until the red color that is characteristic of the permanganate persists; we are then certain that the entire quantity of organic matter has been oxidized and destroyed.

Transporting into the domain of hygiene this process, which had heretofore been solely applied to chemistry, Catherine Schipiloff has deduced from it an ingenious means of purifying drinking-water, which has been published at length in one of the last numbers of the *Revue Médicale de la Suisse Romande;* and although the number of processes of sterilizing water is now quite considerable, it can only be to our advantage to know of this new one, which is highly recommended, if only on account of the ease with which it can be applied.

With one kilogramme of permanganate of potash, costing on an average one franc, 20,000 liters of water can be purified—five centigrammes per liter.

NEW USE FOR BISULPHIDE OF CARBON.—A new use for bisulphide of carbon has been discovered which ought to make it very popular and of large consumption. The peculiar and highly inflammable gas evolved from this powerful and volatile fluid has a downward as well as an upward tendency—a circumstance which renders its use for the destruction of weevils, insects of all kinds, vermin, etc., of the highest practical utility.

An experiment was recently made in the following manner: A small bottle of the fluid, about one pound, was placed on the floor of an empty 1,000-bushel bin, with a small piece of muslin cloth placed loosely on top of the bottle instead of a cork; over all was placed a broken box so as to protect the bottle from being upset or broken, and then the bin was filled to its utmost capacity with corn. On top of the pile another bottle was placed having the same arrangement as the one buried beneath the grain.

The result was highly satisfactory. The live weevils admitted from the field while housing the grain were utterly destroyed, and none further appeared. A thousand bushels of corn were in this case protected from weevils and vermin of all kinds, rats and mice fleeing precipitately from the deadly odor of the bisulphide, for a very trifling cost. It is estimated that the loss to farmers through the destructive methods of the weevils alone, last year amounted to $1,000,000.

NEW MULTIPLE STAINING FLUID.—Dr. P. G. Unna differentiates bacilli in tissues by a polychromic methylene blue solution, which contains methylene red and violet in addition to the blue. The sections are transferred from alcohol, and allowed to remain in the stain for at least ten minutes. They are then passed through water into 33-per-cent. tannic acid solution to decolorize, allowed to remain from two to five minutes, then rinsed with water to enable the exact tint to be observed more readily. If satisfactory, after a thorough washing with water the sections are placed in absolute alcohol, or a solution of gold orange in the same if a yellow counterstain be desired, cleared in oil of bergamot, and mounted in balsam. If the excess of stain is not readily removed, a few minutes' immersion in 25-per-cent. nitric acid, followed by dilute spirit, water, and absolute alcohol, respectively, will effect its removal. By adopting this method it is said to be possible to distinguish two kinds of nuclei (violet and blue), the fibrin, and the protoplasm of the plasma cells. The bacilli stain red, whilst the mucus surrounding them is blue, and the organisms are said to appear in their natural character "in fish-roe like masses of vegetable mucus." It is claimed that the process is particularly suitable for use in the study of leprosy. It appears to depend upon the property, also utilized by Nicolle, by which tannin converts methylene blue into an insoluble form.

ACETIC ACID AS A MENSTRUUM.—Professor Remington has been advocating, at a meeting of the Philadelphia College of Pharmacy, the use of 60-per-cent. acetic acid as a menstruum for extracting drugs. The suggestion was not put forward as a novel one, but it was urged that the acid is an excellent solvent of the active portions of drugs, and is both preservative and antiseptic. Dr. Squibb has obtained very definite and positive results by its use. It appears to form soluble compounds with the active principles of drugs in many instances. Acting on the knowledge that volatile oils are very soluble in the acid, Professor Remington has prepared specimen extracts from various spices by its aid, treating them with four times their weight of the solvent. The whole of the active parts of cassia, cinnamon, cayenne, etc., are said to be extracted, and inert residues left. As regards commercial value, acetic acid is, of course, far preferable to alcohol, and it is said to be more effective, weight for weight, than alcohol of the same strength. According to the *Pharmaceutical Review*, experiments made with nux vomica and belladonna disclosed the fact that complete exhaustion can be obtained by the aid of this medium in less time than with an alcoholic menstruum, whilst fluid extracts, intended primarily for culinary purposes, are now prepared in a similar way from cinnamon, cloves, cardamom, pepper, ginger, mace, nutmeg, celery, pimento, garlic, mustard, vanilla, and Tonka bean. In strength each minim of the finished extracts represents one grain of the material operated upon, and the preparations are said to be admirably adapted to the purposes for which they are intended. They are perfectly miscible with water, and are not of necessity more than slightly acid, since the excess of acid in the weak percolates can be recovered to a great extent by distillation.—*Pharmaceutical Journal and Transactions*, April 1, 1893.

CARPAINE.—This alkaloid, discovered by Dr. Greshoff in the leaves of *Carica Papaya*, L. (*American Journal of Pharmacy*, 1891, 230), is present in the young leaves to the extent of 0.25 per cent., while in old leaves only 0.07 per cent. is present. J. J. L. van Ryn, in operating with 80 kilos, obtained 60 grammes of the alkaloid, which was obtained perfectly colorless by recrystallizing first from ether, later from alcohol. The properties, as described in the *American Journal of Pharmacy*, 1891, 230, were confirmed, but one correction being necessary: the crystals melt at 121° C. (corr.), instead of 115°; the alkaloid turns red litmus blue, but is indifferent to phenolphthalein; the strongest reagents were apparently without action upon the alkaloid. Sulphuric acid and bichromate of potassium gave a green coloration, but the acidified alkaloidal solution with a drop of potassium permanganate solution retained the red color for several hours. Carpaine has the composition $C_{14}H_{25}NO_2$; the platinochloride, $(C_{14}H_{25}NO_2HCl)_2PtCl_4$; the aurochloride, $(C_{14}H_{25}NO_2HCl,AuCl_3)_2 + 5H_2O$; the halogen salts decrease in solubility in the order in which they are given: $C_{14}H_{25}NO_2HCl$, $C_{14}H_{25}NO_2HBr$, and

$C_{14}H_{25}NO_2HI$; the sulphate, $C_{14}H_{25}NO_2H_2SO_4 + 3H_2O$, owing to its solubility in water, was not crystallizable, but by the addition of ether to an alcoholic solution large colorless prismatic crystals separated after a time. The nitrate, $C_{14}H_{25}NO_2HNO_3 + H_2O$, is only soluble to the extent of 2 per cent. in water, but if to a 1-per-cent. solution of the hydrochlorate a few drops of nitric acid be added, a separation of the nitrate occurs, showing the decreased solubility of this salt in hydrochloric acid. The observations made by Dr. v. Oefele established that, with the exception of the caffeine group, carpaine was the only digitalis substitute which by subcutaneous injection did not cause local irritation or abscesses, while internal doses of 0.025 gramme per day did not show any advantage over digitalis. The hypodermatic use of 0.006–0.010 gramme daily or on alternating days is recommended; the effect of the hypodermatic injection is noticeable in the course a few minutes.—*Arch. der Pharm.*, 1893, 184–211 (*American Journal of Pharmacy*, June, 1893).

SOME AMERICAN "NOVELTIES."*—A New York firm has been good enough to favor the American public with an altogether peculiar kind of "Novelties," of which we deem it necessary, in the interest of the good repute of our trade, to say a few words.

"*Ambrettaria*, a powerful synthetic product for perfumery." Although the "discoverers" claim this to be "a product of our chemical laboratory," "Ambrettaria" is nevertheless no definite scientific body at all, but a simple mechanical mixture of 5 parts of musk-seed oil (ambrette oil), 95 parts of antifebrin (acetanilid), and traces of artificial musk. These ingredients were recognized and isolated by us with absolute certainty. We determined the melting-point and other characteristic features of the antifebrin.

"*Oil Catalpa*, a powerful synthetic product for perfumery." The manufacturer of this product most obligingly condescends to offer perfumers, under this new name, a terpineol, to which a few drops of ylang-ylang oil have been added, at the "cheap" rate of $10 per pound. It is to be hoped that no perfumer will fall into the trap.

"*Oil Narcissus*, a powerful synthetic product for perfumery." The person who imagines this product to provide the scent of narcissus will be sadly deceived. This stuff in nothing more or less than the parts of light specific gravity which are obtained as a by-product in the manufacture of terpineol. As this material is of no value whatever in perfumery, we use it in our works for cleaning parts of machinery. The price asked for this product is the trifling one of $7.50 per pound.

"*Oil Ylang-Ylang, artificial.*" This product does not by any means solve the scientific problem of the synthesis of ylang-ylang in a practical manner, which would be a matter of great importance. On the contrary, we have here to deal with a bald and primitive mixture of cananga oil and Peruvian-balsam oil (cinnamein).

We are quite certain that no one could be found with sufficient assurance to try to place such products upon the European market. Any attempt to do so would only provoke mirth. And the house that dares to place such compounds before the American perfumers surely underestimates grossly the intelligence of its would-be customers.

ANTIDOTES FOR POISONS.—In cases where the other articles to be used as antidotes are not in the house, give two tablespoonfuls ground mustard in a pint of warm water. Also give large draughts of warm milk or water mixed with oil, butter, or lard. If possible, give as follows:

POISON.	ANTIDOTE.
For Bed-bug poison, Corrosive sublimate, Blue vitriol, Lead water, Saltpetre, Sugar of lead, Sulphate of zinc, Red precipitate, Vermilion,	Give milk or white of eggs, large quantities.
For Fowler's solution, White precipitate, Arsenic,	Give prompt emetic of mustard and salt, tablespoonful of each; follow with sweet oil, butter, or milk.
For Antimonial wine, Tartar emetic,	Drink warm water to encourage vomiting. If vomiting does not stop, give a grain of opium in water.
For Oil of vitriol, Aquafortis, Bicarbonate potassa, Muriatic acid, Oxalic acid,	Magnesia or soap dissolved in water, every two minutes.
For Caustic soda, Caustic potash, Volatile alkali,	Drink freely of water with vinegar or lemon-juice in it.
For Carbolic acid,	Give flour and water or glutinous drinks.
For Chloral hydrate, Chloroform,	Pour cold water over the head and face, with artificial respiration, galvanic battery.
For Carbonate of soda, Copperas, Cobalt,	Prompt emetics; soap or mucilaginous drinks.
For Laudanum, Morphine, Opium,	Strong coffee, followed by ground mustard or grease in warm water to produce vomiting. Keep in motion.
For Nitrate of silver,	Give common salt in water.
For Strychnine, Tinct. nux vomica,	Emetic of mustard or sulphate of zinc, aided by warm water.

—*Medical Brief.*

LOCAL APPLICATION, PER RECTUM, OF ALOIN CATHARTIC ACID, COLOCYNTHIN, AND CITRULLIN, AS LAXATIVES.*—Kohlstock has instituted experiments in the clinic of Prof. Senator, at Berlin, respecting the subcutaneous and rectal employment of cathartics. The investigations were confined to four vegetable substances: aloin, cathartic acid from senna, pure colocynthin, and citrullin. Subcutaneous introduction proved extremely painful. The author then essayed with happier results the rectal application of the substances mentioned.

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* From Semi-Annual Report of Schimmel & Co., April, 1893, p. 70.

* Translated from *Pharmaceutische Post*, p. 1249, 1892.

The medicaments were dissolved in the appropriate media, and injected into the bowel with the aid of a glass syringe containing 10 c.c. Aloin and cathartic acid proved to be adapted to the milder cases, colocynthin and citrullin to habitual constipation; aloin is the mildest, citrullin the most energetic agent. The aloin was first applied in a glycerin solution; the quantities of glycerin thus injected simultaneously were, however, too slight to account for the cathartic action. The action, moreover, persisted when subsequently, in accordance with H. Meyer's suggestion, the aloin was dissolved in formamide. The solution employed was of the following composition:

Aloin	1 gramme.
Formamide	10 grammes.

A dose of 0.4–0.5 gramme is sufficient to bring about certain results in all cases of mild constipation.

Cathartic acid yields certain results in doses of 0.6 gramme. It is administered as follows:

Acid. cathartinic. e senna	3 grammes.
Aq. dest	7 grammes.

Natr. bicarbon., q. s. ad react. alkalin.

For more stubborn and habitual constipation, colocynthin in doses of 0.01–0.04 gramme, as well as citrullin, should come into requisition, the latter acting vigorously in doses of 0.02 gramme even in aggravated constipation. Prescribe:

Colocynthin	1 gramme.
Alcohol	12 grammes.
Glycerin	12 grammes.

Or,

Citrullin	2 grammes.
Alcohol	49 grammes.
Glycerin	49 grammes.

The following properties are common to all these agents when applied per rectum: On the bowel itself they do not produce the slightest irritation, hence the patient is spared the torturing tenesmus which not seldom follows the glycerin clyster. In most cases, passage ensues pleasantly; severe abdominal pains are very rare. The evacuations are very copious, and in this respect materially surpass those produced by injections of glycerin, for glycerin causes depletion of only the lowest portions of the bowel. The agents in question leave behind no tendency to constipation. On prolonged use, indeed, a certain habituation supervenes; at such times, however, a very slight increase of dose suffices. Disturbing collateral effects were not perceived. The urine always remained normal.—*Wiener Med. Presse*, 1892, p. 1886.

MANUFACTURE OF BRONZE POWDER.*—The principal part of bronze powder sent to the United States from Germany is manufactured in and near the cities of Fürth and Nuremberg, Bavaria, perhaps a hundred establishments being engaged, the factories being generally located on some small stream, where water furnishes cheap power for driving the hammers and stamps. The exports of bronze powder and metal leaf to the United States from the two places named for the year ended Sept. 30, 1892, were as follows:

Fürth	$399,177 94
Nuremberg	303,849 64
Total	703,027 58

Of this total perhaps $50,000 in value may have been of metal leaf of various kinds, the export of which formerly was much greater, but now it is nearly suspended on account of the high duty.

Bronze powder is composed of copper, tin, zinc, and antimony, melted in proper proportions and cast first into rods of half an inch in diameter and about 3 feet long. These rods are then rolled until about 2 inches wide, and then cut into suitable lengths for handling. These pieces then go to hammers, where they are beaten into a very small fraction of their former thickness, and are then taken to the sulphuric-acid bath, where each sheet is washed to remove all impurities, rust, and dirt. After being thoroughly dried the sheets are again hammered by steam hammers until no further reduction is possible, there being a limit to which machinery can be used. Up to this stage the treatment the metal receives, whether intended for metal leaf or powder, is identical, but now the process changes. If designed for metal leaf, the further beating must be done by hand; but if for bronze powder, the sheets go to shears, where they are cut up into small particles, and now become known as clippings. These are now ready for the stamp mills, which are run in batteries, enabling one man to run or attend fifty or more. When sufficiently pulverized, the powder is sifted in a peculiar manner, the heavier and better qualities going to one receptacle and the inferior grades to another. The cheaper qualities are mixed with quartz powder to enable them to be sold cheaply.

The expense of manufacturing bronze powder rests largely in the production of the clippings, a great deal of hand work being required. Of late, parties in the United States have begun the manufacture of bronze powder, and have purchased the raw material in Bavaria, which has excited fears that ultimately the manufacture will be successfully installed there and the business here broken up. In order to prevent such a disaster to themselves, the manufacturers of bronze powder have entered into an arrangement whereby all agree not to sell any clippings to be exported to the United States, except through a committee which places the orders and at an agreed price—1.25 marks per pound, or about 30 cents—a price which they hope and expect will virtually stop the demand.

Bronze powder is sold at prices varying from 24 cents per pound for the very cheapest to 75 cents for the best quality, the duty being 12 cents per pound, irrespective of quality or value. The greater part of the bronze powder shipped from Fürth is invoiced at less than 50 cents per pound; in fact, the average is not over 40 cents; so it may be seen that the manufacturers of clippings have a pretty sure thing on preventing the manufacture of bronze powder in the United States so long as they can control the quantity and price of the raw material and keep the trade in the article which they now hold. There is no duty on clippings.

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* Report by U. S. Commercial Agent Dunlap, of Fürth, Oct. 30, 1892.

A PROXIMATE PRINCIPLE FROM PHYTOLACCA DECANDRA.*—Some weeks ago Mr. E. G. Eberhardt, chemist for Eli Lilly & Co., of Indianapolis, sent for further investigation a sample of material obtained from poke root. It was prepared according to the following method: The concentrated alcoholic percolate was precipitated by water, and the separated precipitate purified by solution in alcohol and precipitation by chloroform; this precipitate was dissolved in potassium hydrate solution and precipitated by diluted sulphuric acid, then dissolved in alcohol and precipitated by ether. The dried and finished product was obtained as an amorphous grayish powder, glistening somewhat from its scaly condition. When shaken with water it frothed considerably. Its taste was slightly bitter and acrid, and when inhaled it acted as a sternutatory. It was slightly soluble in cold and boiling water, soluble in alcohol; insoluble in ether and chloroform. Acetic acid dissolved it with the aid of heat, and formed a jelly in cooling. Alkalies formed with it soluble amorphous cómpounds that scaled on drying. Sulphuric acid, when concentrated, dissolved it with a cherry-red color, changing to violet and purple. On the application of heat, the substance commenced to decompose at about 208° without fusing, and at a higher temperature was consumed without leaving an appreciable residue. Nearly as much loss in moisture occurred when the substance was dried in a vacuum over sulphuric acid at ordinary temperatures, as when it was heated in an air bath at 110°. No further loss was noted on raising the temperature from 110° to 120°.

The substance, when dried at these temperatures, give the following results on combustion:

(1) 0.2563 gramme of substance gave 0.5543 gramme CO_2 and 0.1750 gramme H_2O.
(2) 0.203 gramme of substance gave 0.442 gramme CO_2 and 0.1429 gramme H_2O.

	(1) Per cent.	(2) Per cent.
Carbon	58.98	59.36
Hydrogen	7.58	7.81
Oxygen	33.44	32.83
	100.00	100.00

This corresponds to the formula $C_{54}H_{82}O_{23}$.

In the letter accompanying the sample, Mr. Eberhardt expressed the opinion that this substance resembled the phytolaccic acid of Terreil, mentioned in the *American Journal of Pharmacy*, 1881, p. 325. There are, however, some important differences in solubility. It would probably be much nearer the truth to classify this compound with the saponins, since it resembles the latter in many of its properties.

In 1888 (*American Journal of Pharmacy*, p. 123) Mr. W. A. Partee separated from poke root an amorphous substance which gave a reddish color with sulphuric acid, and which he considered to be saponin.

It may be said that the above analysis does not indicate saponin, but in answer to such an objection we may recall the fact that the difference from the published analyses is not great, that there are probably many saponins, and that it is doubtful if any one of the saponins has ever been prepared perfectly pure.—*American Journal of Pharmacy*, June, 1893.

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*By Henry Trimble. Contribution from the Chemical Laboratory of the Philadelphia College of Pharmacy. Read at the Pharmaceutical meeting, Philadelphia College of Pharmacy, May 16th.

MALAYAN ARROW-POISONS.—In the *Pharmaceutical Journal* of Nov. 12, 1892, Mr. E. M. Holmes gave an account of the preparation of an arrow-poison used by the natives of Perak in the Straits Settlements. The poison is generally a mixture of three extracts, two of which are made from the root-bark of two species of Strychnos, and are known as *ipoh aker* (root-poison) and *aker lampong* respectively, while the third, *prual*, is got from the root-bark of a tree not yet identified. Six parts of ipoh aker are usually mixed with one each of lampong and prual, but any one of the three substances is sometimes used alone. A very full account of the whole matter is to be found in the Kew *Bulletin* for 1891.

Mr. Holmes very kindly sent me the three roots from which the arrow-poison is made, for the purpose of determining their physiological actions, but unfortunately the quantity at his disposal was so small that my examination of them has necessarily been very imperfect. As there is no prospect of obtaining any more soon, and as the arrow-poison has either not been described before or has been confused with that obtained from the *Antiaris toxicaria*, I have thought it best to publish the results of my few experiments.

Ipoh aker.—0.8 gramme of the root-bark was powdered, and exhausted with rectified spirit, the resulting extract weighing 5 centigrammes. Mixed with water, in which it is only partially soluble, the whole was given subcutaneously to a rabbit. In ten minutes the animal was visibly affected; in fifteen minutes it was gasping for breath, the heart was slowed, and the animal quite disabled, but it did not die until forty-eight minutes after administration, when it had an irregular convulsion. The heart-beats were simply feeble flutterings, and the blood was so imperfectly aërated in consequence for several minutes before death that the final convulsion was certainly asphyxial in its origin.

A small quantity of the extract given to a frog caused death slowly, but the heart passed through all the phases characteristic of poisons of the digitalis group. The skeletal muscles were also poisoned to some extent, but not so markedly as the heart.

Although the plant from which the poison is derived apparently belongs to the genus Strychnos, its active principle has absolutely no resemblance in pharmacological action to strychnine. Like so many arrow-poisons, it is a heart poison, essentially like digitalis in its effects. Prolonged heating with water or alcohol seems to decompose the active substance, which is probably not very stable. This is confirmed by the results of the examination of some of the arrow-poison which was in the Society's museum. I found it to be quite inert, no doubt because it had decomposed.

Aker lampong.—The root-bark was exhausted with alcohol, and a small quantity of the extract given to a frog. The action was undoubtedly that of a body of the digitalis group. In rabbits the amount of the drug at my disposal simply caused general depression without any very characteristic symptoms. There was no trace of any strychnine-like action.

Prual.—Of this there was not enough to make satisfactory experiments.

For purposes of comparison Mr. Holmes also gave me some of the sap of *Antiaris toxicaria*, which has been long known to Europeans as a Malayan arrow-poison, and is the subject of a very considerable literature. It is the famous upas tree, the arrow-poison being known as *ipoh kayu* (tree poison) among the natives. I easily separated out a quantity of pure antiarin, the action of which has long been recognized as identical with that of digitalis. I was curious, however, to ascertain its toxicity as compared with that of strophanthin and urechitin, two other very potent cardiac poisons. Of the former about $\frac{1}{4800}$ grain, of the latter about $\frac{1}{2600}$ grain, is fatal to ordinary-sized frogs. Antiarin was found to be considerably more deadly, as $\frac{1}{6400}$ grain was always fatal within twenty-four hours. The smallest lethal dose caused stoppage of the heart in diastole, but larger doses in systole.—Ralph Stockman, M.D., F.R.C.P.E., in *Pharmaceutical Journal and Transactions*, May 20, 1893.

A COMPARISON OF SOME MEDICINAL BRANDS OF HYDROGEN PEROXIDE.*—The brands examined were Béné, Peuchot, Marchand, and Oakland Chemical Company. Each was claimed to be chemically pure and of fifteen volumes strength. All were obtained directly from the manufacturers, and, though some were several weeks old, they were in unbroken packages and remained sealed until the moment of the estimation of oxygen. Mr. Peuchot learned that the analysis was being made, and sent a special sample which he claimed would be an improvement on his former productions. This, in the table, is designated as Peuchot No. 2.

The *volume of oxygen* was estimated by the method of F. X. Moerk. A solution of potassium permanganate, 2.625 grammes to the liter of water, was prepared. About 2 liters of water was acidified with 5 cubic centimeters of dilute sulphuric acid, and exactly 5 cubic centimeters of the hydrogen peroxide solution added. The potassium permanganate solution was then poured in gradually until it ceased to be decolorized; and the number of cubic centimeters added, divided by 10, represents the volume of oxygen.

In the results for volume, that sample which was examined again after being opened is marked with the small letter *a*.

The *acidity* was reckoned by using a solution of 10 milligrammes of potassium hydrate in 1 cubic centimeter of water, with phenolphthalein as indicator. Ten cubic centimeters of the sample was tested in each case, the figures in the table representing the average of results.

Fifty cubic centimeters were evaporated at a low heat to dryness, and both residue and the original sample tested for chloride, sulphate, phosphate, fluoride, borate, barium, and other metals by the usual processes of the laboratory. Sodium and potassium were recognized by the Bunsen flame.

Each sample underwent the same treatment, and attention may be called to the fact that, however widely these results differ from results of other investigators, they are, as they claim to be, *comparisons*. The same weights, measures and solutions were used in every instance, in order to guarantee uniformity.

Generally more than one bottle of a brand was examined and the volume of oxygen was found to vary considerably, no doubt dependent largely on age. Of the Peuchot brand it is claimed, however, it "can be left open and exposed to the air without losing strength."

	Specific Gravity.	**Volume of Oxygen.**	**Volume of Oxygen after having been opened at least 24 hours.**	**Acidity. Milligrammes of KOH for 10 c.c.**	**Residue in 50 c.c. Milligrammes.**	**Sulphuric acid or Sulphate.**	**Metals.**	**Other matter.**
O. C..........	1.0119	a13.5—12.0	a13.0	6.45	30.0	trace	Sodium	present
Marchand.	1.0116	13.5—a10.4	10.3–a10.0	25.16	50.6	present	Sodium	boric acid
Béné..........	1.0110	10.5—a9.8	a9.45	6.33	60.6	present	Sodium Potassium	none
Peuchot No. 2...	1.0120	11.76	—	7.20	150.0	trace	Calcium Sodium Potassium (trace)	glycerin
Peuchot No. 1...	1.0136	13.5—a6.1	a4.05	9.85	320.0	present	Sodium	present

All the samples contained HCl or chloride, and phosphoric acid or phosphate (Béné merely a trace); but were free from barium, except P. No. 1, which contained a trace.

In the residue from Marchand's solution no chloride could be found; the solution, however, evidently contained hydrochloric acid, which must have been driven off during evaporation, the excess of sulphuric acid preventing the formation of chlorides.

The residues from Peuchot's and O. C.'s solutions were not again entirely soluble in water, alcohol, ammonia, or cold hydrochloric acid. In Peuchot No. 2 this insoluble matter was calcium phosphate.—*American Journal of Pharmacy*, June, 1893.

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*By R. Louis Lloyd, A.B. Read at the Pharmaceutical Meeting of the Philadelphia College of Pharmacy, May 16th.

MONOTRICHLORACETYLEDIMETHYLPHENYLPYRAZALON is the chemical name for hypnol. Prescribers who object to trade names for drugs can use the chemical one.

FROM the Pacific Coast 4,000,000 lbs. of borax a year are supplied for home consumption in the United States. The total quantity consumed in this country has now reached the total of 10,000,000 lbs. yearly.

GINSENG TO BE PROTECTED.—A bill is now before the Ontario Legislature which provides for the punishment of any person who buys ginseng with the knowledge that it has been cut, rooted up, or gathered between Jan. 1st and Sept. 1st.

THE NEW PHARMACOPŒIA will be ready for delivery some time in July or August. The cheapest edition will retail at $2.50. It will be about twice as large as the former editions and about half the price, although many times as valuable from a pharmaceutical standpoint.

TOO MUCH GAMBIER.—Gambier in the New York market is extremely plentiful in supply and lower in price than at any time since 1891. The feeling has been weak, and importers have in most cases preferred to sell goods from vessel at small margins rather than store them. The weakness of the market is reinforced, so to speak, by an even lower range of prices in London, shipments from which port to New York are not immediately improbable. The heaviest receipts of the year will occur during July and August, so that the prospect of an early rise in values is not at all brilliant. Singapore, Malaya, shipped to this country, from Jan. 1st to May 1st, 5,400 tons of gambier, an exceptionally large quantity for the period covered.

REUNION OF BOTANISTS.—On Saturday last the annual session of the French Society of Botany was commenced at Montpellier. It is held there this year in order to celebrate the third centenary of the foundation of the Botanical Gardens by Henri IV. in 1593. Busts of three Montpellierian botanists are to be inaugurated—viz., Dural, Martines, and Planchon, the latter being known as the introducer of American plants into France and for his work generally in connection with the vine. Some foreign *savants* will take part in the proceedings. Professor Warming (Director of the Botanical Institute of Copenhagen), Count Sohns-Laubach, and Dr. Zacchorias (professor at Strasbourg) are amongst the arrivals.—*Chemist and Druggist*, May 27, 1893.

FIAT CAPSULÆ.—R. St. John Perry, of Lincoln, Neb., concludes an interesting article on Capsules, in the *Indiana Pharmacist*, as follows:

Often when my spirit was grieved and my patience and patients sore taxed by miserably prepared capsules, I have wondered why it was that manufacturers of capsules did not inclose in every box of capsules a slip which should read thusly:

> NOTICE.
>
> The object in dispensing drugs in capsules is to afford a compact and palatable form of administering nauseous medicine. To aid the physician in his efforts, and as proof of your own skill, see to it that you secure a good "mass," accurately divided, and inclosed in capsules of a suitable size, not too large nor too small. *Be sure that the outside of the capsules are free from portions of the mass, drying powder, or excipient.*

A CONTEMPTIBLE PECULATION.—Out in Washington Territory, farmers are supplied with squirrel-poison at public expense, and some of them, not being bothered by squirrels, take the poison to a drug store and sell it at a discount from wholesale rates. The poison is strychnine, put up in ounce bottles. Recently, at Spokane, a druggist who had the contract for supplying this poison endeavored to increase his profits by breaking the seals of a large number of the ounce vials and extracting a portion of the contents. "It is generally believed" that of the 1000 ounces supplied, at least 100 ounces were made to serve as rebate to the contractor. This game, however, was brought to an ignominious ending by the arrest of the thief, and a settlement for amount overdrawn. Haven't they any squirrel-guns out in Washington?

ANNUAL ELECTION AT BROOKLYN COLLEGE.—The following officers and delegates of the Brooklyn College of Pharmacy were elected at the annual meeting: President, Albert H. Brundage, Ph.G., M.D.; Frst Vice-President, Walter B. Averre; Second Vice-President, Frederick H. Pamphilon, Ph.G.; Third Vice-President, Levi D. Sheets, M.D.; Secretary, Flavel N. Bliss; Treasurer, Peter W. Ray, M.D.; Trustees, three years, Rudolf C. Werner, Ph.G., Edward Alt, John Pfeiffer, Ph.G.; Trustee, one year, Luther F. Stevens, Ph.G.; Censors, Lithgow T. Perkins, James B. Newton, Ph.G., Carl L. Trites; Delegates to meeting of the American Pharmaceutical Association at Chicago, Aug. 14, 1893, Rudolf C. Werner, PhG., Albert H. Brundage, PhG., M.D., William P. DeForest, Ph.G., Frederick H. Pamphilon, Ph.G., John Pfeiffer, Ph.G.; Charles E. Knebel, clerk of the college.

KENTUCKY DRUGGISTS met in convention at Louisville on May 23–24, 1893; attendance about 140. A committee was appointed to make recommendations to the State Board of Pharmacy as to educational requirements of applicants for admission to schools of pharmacy. The Kentucky law taxes the sale of liquor for medical purposes $50 per annum, and it was reported in the convention that the law was being put to the test by Louisville druggists. O. C. Dilley got a prize for his paper on "The Relative Intrinsic Values of Alexandria and Tinnevelly Senna." Addison Demitt also carried off a prize; his subject was "The Evils of Substitution." The discussion of this paper showed a decided sentiment in favor of substitution, which was met by an equally energetic repudiation of it. Other interesting papers were read, and on the whole the convention was a lively and profitable one.

THE FLORA OF THE PHARAOHS.—The oldest herbarium in the world is in the Egyptological Museum, Cairo. It contains a large number of plants, dried 5,000 years ago, and recovered from sarcophagi. The colors of most of the specimens are excellently preserved. By soaking the plants in warm water, pressing, and re-drying, they are rendered suitable for herbarium purposes. Among the plants most commonly used by the ancient Egyptians for the decoration of the dead were the white and the blue lotus, the red poppy, the flowers of the pomegranate, safflower, *Chrysanthemum coronatum*, and mallow flowers, as well as the leaves of the celery, the onion, and the leek. Many of the plant-remains were identified by Schweinfurth, the African traveler, and a special treatise on the Pharaonic flora has recently been written in French by V. Loret, and published in Paris.—*Chemist and Druggist*, May 27, 1893.

THE ARKANSAS STATE BOARD OF PHARMACY met in the Senate Chamber in Little Rock on May 19th, according to previous announcement, with all the members present. This being the regular annual meeting, the officers for the ensuing year were elected, as follows: J. M. Anderson, President; and W. W. Kerr, Secretary. Nineteen applicants for registration presented themselves for examination, of whom the following were successful, viz.: Ed. M. Johnston, Ozark; A. L. Hills, Camden; A. V. Hays, Van Buren; Chas. L. Pegues, Siloam Springs; Dr. J. M. Gist, Beebe; W. C. McMillen, Pine Bluff; F. V. Whittlesey, Little Rock; L. K. Snodgrass, Little Rock; T. C. Graves, Hot Springs, Wm. M. Morse, Hot Springs. The term of office of W. W. Kerr as a member of the Board expired with this meeting. He has, however, been reappointed by the Governor, and will take his seat for the next term of five years at the meeting in August. The next meeting will be held in Little Rock on Wednesday, August 9, 1893.

W. W. KERR, *Secretary*.

THE AMERICAN PHARMACEUTICAL ASSOCIATION.—Headquarters for the American Pharmaceutical Association during its Chicago meeting, August 14th, have been established at the Palmer House, three blocks from the place of meeting, which will be at the Art Institute, at the junction of Michigan avenue and Adams street.

At this hotel a good room with a double bed for two persons can be had, through especial arrangements made by the local committee, at four dollars per day and upward, or with an additional bed for six dollars.

Those who do not care particularly about being located at the headquarters of the Association can secure accommodations at other hotels in easy reaching distance of the place of meeting at from one dollar to four dollars per day for each person for the room only, provided application be made in time.

It should be borne in mind in selecting accommodations that the place of meeting is some seven or eight miles from the Fair grounds themselves, and that one must therefore make a choice as to whether it is preferable to be near the grounds or to be near the place of meeting.—*American Druggist*, June 1, 1893.

PHARMACISTS AS LAWYERS AND LAW-MAKERS.—The *New England Druggist* congratulates the pharmaceutical profession of Massachusetts on the success that has followed their entrance into the field of legislation. This, it says, conveys a moral; for when the first attempts in this direction were made they resulted in complete failure because the petitioning pharmacists had gone into the work relying upon their feelings instead of their intelligence; they were inconsiderately asked what they wanted, and of course couldn't tell, so they withdrew from the State House in confusion. They got their second wind, however, and began systematically to study the statutes and the fundamental law, so that after a short time they were able to "speak right out in meeting" before the assembled sagacity of the commonwealth. Not only this, but they secured by persistent endeavor a Sunday law, a Poison law (by which the list of poisons requiring registration was cut down 50 per cent.), an Adulteration law, a Pharmacy law, and a Liquor law. They also succeeded in defeating what is known as the Town Agency bill, which was designed by a "strong temperance House" to prevent them from selling liquor even on a physician's prescription. All this was not done by spontaneous go-as-you-please outbursts, but by a small, well organized body of pharmacists who made it their especial task to look after the interests of the drug trade as connected with legislation. Perhaps some other State may be willing to sit at the feet of the Massachusetts Gamaliel.

THE SHOE IS NOW ON THE OTHER FOOT.—It will be remembered that Dr. R. G. Eccles recently obtained $6,000 from Wm. Radam, originator of the "microbe-killer," as a result of a suit for libel, occasioned by Radam's reference to the plaintiff as a charlatan. Now it is Radam's inning. He sued W. O. Allison, Benj. Lillard, and Dr. Eccles, laying claim to $200,000 damages because of the publication in the *Druggists' Circular* of an article on Radam's Microbe-Killer characterizing it as a cumulative poison. The Supreme Court of New York has given Mr. Radam a verdict of $500 against each of the defendants. The reason the damages bore such a vanishing comparison to the sum named in the suit was, as stated by the court, that no damage to the business was shown, although the article which was intended to produce that effect was proven to be libelous. Plaintiff had twenty witnesses to prove they had been cured by the "microbe-killer" of cancer, catarrh, dyspepsia, inflammatory rheumatism, blood-poisoning, asthma, pneumonia, consumption, diphtheria, and many other complicated diseases. To show that the compound was not a cumulative poison, some of the witnesses swore they had taken from 15 to 160 gallons of it, and were not only not poisoned, but cured and in perfect health. This certainly affords an opportunity for the Society of Psychical Research to examine into the mental antecedents of these peculiarly afflicted and marvelously cured people. Yet it is quite safe to assume that few people will be likely to enter into a contract to consume 160 gallons of this or any other unknown combination on the strength of the testimony given in the case. However that may be, Mr. Radam is content with the verdict as a vindication —and an advertisement.—*Ex.*

ANNUAL COMMENCEMENT OF THE UNIVERSITY OF KANSAS.—The twenty-first annual commencement season of the University of Kansas was opened on Monday, June 5th, by the exercises of the School of Pharmacy. In the morning at 10.30 o'clock the members of the graduating class and their many friends assembled in the University chapel, where the following programme was presented:

Essay, "The Pharmacopœia," by Alfred Youngberg, Ottawa.

Oration, "The Pharmacist," by Walter Wilson, Miltonvale.

Address by Dr. W. L. Schenck, of Topeka.

Sage Advice by Professor Sayre, Dean of the School.

A pleasing part of the programme was the music, which was under the direction of H. O. Wheeler, of Kansas City, Mo.

The graduating class numbered thirteen. Their names are as follows: DeForest Baker, Louis H. Bergman, Harold Day, A. E. Gould, C. D. Lieurance, G. B. Norberg, R. E. Watt, E. F. Wallick, A. Youngberg, Homer Oatman, A. P. Rüdiger, N. H. Seiler, W. E. Wilson.

In the evening, after the address of Mr. Scudder, the alumni held a banquet in honor of the senior class. The following toasts were proposed and answered: "The Alumni," by Mr. O'Donnell; "The Class of '93," by Mr. Wallick; "The Class of '94," by Professor Boyce; "The Ladies," by Professor Blake; "Latin," by Miss Oliver; "Ancient and Modern Pharmacy," by Mr. Dick.

Professor Sayre acted as toast-master, and did it in his usual felicitous style.

The exercises were exceptionally successful, and the University may well feel proud of the School of Pharmacy.

INDIANA'S ANNUAL EVENT.—Indiana pharmacists to the number of 125 met at Indianapolis June 8th and 9th. The attendance last year was larger but not so enthusiastic. Delegates were chosen as follows: To the World's Congress of Pharmacy—Thos. J. Moffett, Edinburg; F. W. Schultz, Brazil; R. C. Knoffel, New Albany; A. L. Greene, Lafayette. To the national meeting of the A. P. A.—J. N. Hurty and J. K. Kelly. Among the papers read was one by E. W. Detterman, of Vincennes, on the sale of patent or secret preparations. Patent medicines, he said, are usually cheap in themselves, and yet they are sold at a higher price than any article the druggist handles, and still he makes a small profit. Nor does the manufacturer make an enormous profit; the bulk of the profit goes to the newspapers for advertising. While the druggist cannot quit handling patent medicines as long as there is so great a demand for them, he can discourage the use of them. If a customer calls for a certain kind of sarsaparilla, he can only sell him that kind; but in a large number of cases the customer has no particular preference, and then it is that the druggist can put off on him some preparation of his own or some non-secret preparation. In this way he can secure for himself the profit which legitimately belongs to him, instead of allowing it to go to the newspapers.

Frank H. Carter, of Indianapolis, said that was just what he had been doing for nineteen years, during which time he had established a good trade on about 150 of his own preparations; not because he thought his preparations were better than others, nor because he objected to the newspapers getting the benefit of patent-medicine advertising, but simply for the dollars that were in it for himself. He was out for the money, as he supposed the patent-medicine manufacturers were. He would acknowledge that if they could establish their goods so that people called for them, it was his business to keep them and say nothing, but at the same time he would continue to establish his own preparations.

George O. Jobes denounced all patent medicines as frauds and all manufacturers of them as liars.

The following officers were elected for the ensuing year: President, John Kennedy, Vincennes; First Vice-President, George W. Haynes, Evansville; Second Vice-President, William Ranke, Fort Wayne; Third Vice-President, Thomas Moffett, Edinburg; Secretary, W. B. Stocker, Indianapolis; Treasurer, Granville G. Allen, Indianapolis; Committee on Education, Otto Gross of Fort Wayne, David Witt of Lafayette, and T. J. Moffett of Edinburg.

BOTANICAL DRUGS FIRMER.—It deserves to be pointed out as a conspicuous fact that despite the universal depression which has this year prevailed in the drug business, in the department of botanical drugs prices have been steady almost beyond precedent. Not only has the general list presented this encouraging feature, but in many instances values have hardened without extraneous support, thus offering convincing proof that the articles so affected occupy an inherently strong position in the market. The situation thus outlined finds its most apt exemplification in many of the articles coming from the various sections of Europe where medicinal herbs and analogous products are cultivated, but more especially in the central and southern portions of the Continent. In seeking a cause for this interesting condition of affairs, we are led first of all to investigate the truth of the report that the winter and spring weather has been particularly injurious to vegetation in those countries. Nothing comes with more regularity than reports of this character, the trade seeming to expect them as a matter of constant business diet, and it is therefore creditable to their good judgment that they are seldom carried away by unconfirmed rumors or magnified facts.

When a positive assertion, however, is persistently reiterated, and repeated by an increasing number of observers, it is to be presumed that some foundation exists to warrant the statements made. In the matter in point, for more than two months advices from the farming districts have been unfavorable, and many crops have been made the object of comment with the view of estimating the probable extent of the injury. The damage sustained, so far as the facts are known, has been occasioned mainly by drought, but in some instances excessive and prolonged chilliness of the atmosphere has checked the growth of the plants and impaired their appearance, if not affecting their virtues.

The area affected by these conditions of the weather has been very wide, virtually embracing the whole of Europe. From time to time we have specified the leading articles which have been brought into discussion as having felt the effects of the drought, and the following occur to us now as being in that category: chamomile flowers, ergot, insect flowers, caraway seed, marjoram, lavender, and rosemary. The more recent reports, however, indicate that showers have fallen on portions of the parched regions, but their arrival was too late to fully restore the vigor of the plants, and, although some benefit was derived from them, a number of products had progressed too far to be materially benefited.

In consequence of these reports, advances have lately occurred in quite a number of botanical drugs; and after making due allowance for exaggeration, prompted by motives of self-interest, there is ample reason for the opinion that the class of goods now under review, with some exceptions of course, will continue to command closer attention and better prices during the balance of the year than they have for a long time.—*Oil, Paint and Drug Reporter*, June 5, 1893.

ONE BY ONE THE ROSES FALL.—H. H. Warner, the "Safe Cure" boomer, has made an assignment. This is a much more remarkable fact than his first assignment, for that occurred when his career was in the bud, this after he had achieved a fortune. That was a little tin-horse affair, in a one-horse business town, before many people outside of Ann Arbor (where the failure occurred) knew there was such a man as this particular H. H. Warner. He was then in the tin and hardware business, which he had entered without capital and in search of experience. Having given his creditors all his property, he began his real career—not the manufacture of "liver and kidney cure," but the getting acquainted with men *via* the drummer's route. He became a traveler for a Western firm, and impressed himself and the value of his wares upon all whom he met. As a drummer he was a success.

Then he went into partnership with a man named Greenleaf in Rochester, N. Y., and began the selling of safes. Here too he was phenomenally successful. It was just before the oil fever in that section began to visibly subside, and money was everywhere on the go. Mr. Greenleaf was not constituted in the same way as his partner, and after ten months the former withdrew from the business. This was in May, 1870, and within three years Warner had about a hundred men on the road selling safes.

The next venture was the one which has made his name a "household word" throughout North America and civilized Europe. Dr. Craig was the gentleman who is said to have providentially saved Warner from an untimely grave. Craig was an "herb doctor," and his compound is the basis of the "Safe Cure" remedy. He and Warner went into a sort of partnership, but in the course of time came to a disagreement as to terms and claims, and Warner was once more single-handed—on account of which his erstwhile partner was shut out from drawing a regular salary and sharing in the growing gains of the business that was based upon his recipe.

At the outset of the patent-medicine boom, all the cash that could be raised was put into advertising; and as the medicine began to sell, the profits were made to still further swell the coffers of the newspaper proprietors. These country newspapers are a great institution. So thought H. H. Warner, and through him they have been enriched to the extent of some $5,000,000 within the past twenty years. If he is now unable to recover from the financial calamity that has befallen him, they ought at least to build him a monument when he dies. But before the business had become actually lucrative for Mr. Warner, he had nearly reached the limit of his credit; and Duffy, the spirit-maker, who had backed him with material for the manufacture of the goods, had drawn up a decree that no further credit should be extended to him. Just then, of course, to make the romance complete, the receipts began to show a flattering balance on the "safe" side of the ledger, Warner was soon out of debt, and his "destiny" so impressed Mr. Duffy that further loans, for side speculations, could be had from him for the asking.

Warner had a weakness for side speculations. One of the most remarkable of these—although it was not especially remarkable in being a failure—was the building of glucose works in Kansas City. He had the notion that if money could be made through glucose manufactured in Buffalo, how much more might be made if the works were located out among the prairie cornfields! So he put up a six-story building, with a ground area of 150 by 400 feet, furnished it with costly machinery, and then charged it all up to profit and loss—not a pound of glucose was ever made there. This meant a half-million out of pocket, and, as Warner was the engineer of the scheme and the chief investor, he was of course the chief loser.

One of the mute witnesses of the downfall of this truly meteoric Yankee is the $100,000 observatory which he erected in Rochester, and which, next to his newspaper, pamphlet, and board-fence advertising, has contributed most to his well-nigh world-wide notoriety. Professor Swift, the comet-finder, who owned the telescope, had it removed when the failure of Warner became known. The observatory, along with the other assets, is now in the hands of a receiver.

Mr. Warner was not much of a talker, strange as this may seem. He was persuasive by virtue of earnestness and persistency, coupled with an intelligence in advance of that of his customers, perhaps, but not so far in advance as to be out of sight. He had studied human nature by being lavish of his own; he met the popular curiosity for details by supplying them in abundant and picturesque completeness, so that the sufferers from obscure and apparently incurable ills thought they saw in his patient literature an answer to their unspeakable complaints, and a reliable promise of relief; he knocked loudly and persistently at the door of public confidence, and, being fairly loaded with credentials, gained a generous if only a temporary admittance. Alas, poor Yorick!

Trade Supplement.

The BULLETIN *invites its advertisers and subscribers, and all connected with the drug trade, to send items of information, for these columns, concerning all new departures, products, and facts regarding the general and special trade interests of druggists.*

THE fourteenth annual meeting of the Kansas Pharmaceutical Association, at Wichita, May 23–25, 1893, was the largest and most successful meeting in the history of the Association, and on no previous occasion were so many new members ever added to the list.

⁂

GRADUATION exercises of the Massachusetts College of Pharmacy were held on May 24th. The class numbered twenty-five. Acknowledgments are due for the unique invitation card received by the BULLETIN. Long may the Massachusetts College of Pharmacy wave!

⁂

THE Nebraska State Pharmaceutical Association met in annual convention at Nebraska City, June 6, 7, and 8, 1893. Over 125 druggists were present, many of them accompanied by their families. The meeting was an interesting one—in fact, at some of its stages, absorbingly so.

⁂

THE Grasselli Chemical Company has recently fitted up and is now occupying a new and more commodious suite of rooms at 71 Wall street, New York City, where they will be pleased to see their friends. The genial manager, Mr. Schwartz, has been very successful in the conduct of the business, which has increased largely of late.

⁂

RECTAL suppositories, the active ingredient of which is citrullin, and the base 95-per-cent. glycerin, have been added to the list of pharmaceutical specialties of Parke, Davis & Co. These suppositories, each one of which contains about 1/3 grain of citrullin, are put up in bottles of six and twelve. In the "Progress" columns of this number of the BULLETIN will be found a very interesting note from the *Wiener Medizinische Presse* on the action of citrullin.

⁂

THE following note refers to the celebrated Sticky Fly Paper made in Grand Rapids:

OFFICE OF GREENWICH PHARMACY.

Messrs. O. & W. Thum, Grand Rapids, Mich.:

DEAR SIRS:—Your pamphlet received, and in regard would say that I have this year ordered the ten-case lot of Tanglefoot. This makes my seventh year that I have sold it, and have never lost a sheet during the whole time, and have kept it over winter.

Yours respectfully,

C. MEALEY, *Prop'r.*

THE Arkansas Association of Pharmacists met in annual convention at Little Rock, May 16–18, 1893. About seventy-five pharmacists were on deck. They agreed among themselves to have no more exhibits of drugs etc., at the annual meetings. The following officers were elected for the ensuing year: President, G. N. Hart, Pine Bluff; First Vice-President, M. A. Eisele, Hot Springs; Second Vice-President, F. G. Kerr, Van Buren; Secretary, J. W. Biedelman, Little Rock; Treasurer, J. A. Jungkind, Little Rock.

A banquet and stereopticon entertainment closed the proceedings. The next meeting will be held at Hot Springs.

⁂

ALABAMA.

E. A. Allen, that prince of good fellows who so handsomely presides over the prescription department of J. H. Stickney, Anniston, is an excellent leader of a german as well as proficient in compounding. No young man in Anniston has more friends than Mr. Allen; he has earned his popularity, too.

J. H. Stickney, Anniston, recently purchased the interest of Mr. Trell, and is now sole owner and proprietor.

Dr. J. L. Wikle, of Anniston, was over at Birmingham during the late meeting of the Alabama Med-Pharmaceutical, and took an active part in the proceedings.

⁂

GEORGIA.

D. E. Marshall, the efficient prescriptionist for T. F. Burbank, of Cedartown, was recently joined in wedlock to Miss Mary E. Chambless, of the same city. Mr. Marshall is a most excellent gentleman, and we gladly throw the old slipper after him.

Ed Bradford, the only druggist of Cedartown who is a celibate, will, if reports be true, not long remain so. Success to you, Ed.

What drug drummer does not know clever Cam Brown, of Gainesville? "To know him is to *love* him." Cam will shortly take unto himself an helpmeet, and it goes without saying that *she* will gain a prize.

Handsome Tom Black, of Gainesville, is still at the same old place, constantly making accessions to his long list of friends.

Dr. George, Gainesville, makes a most excellent manager for Dr. Dixon, and is a most agreeable gentleman.

Mr. Stewart, the prescriptionist at Vanhorn's drug store, Monroe, is an expert telegrapher as well as mixer of drugs.

Poore & Lawrence is the name of a new drug firm in Monroe. Dr. Poore, the head of the firm, is the leading doctor of the town, and Mr. Lawrence is a gentleman of decided business qualifications.

Joe Crawford, of West Point, is acknowledged to be the handsomest druggist in Georgia, and Joe is just as clever as he is handsome.

Hammack, Lucas & Co., Washington, have opened out a branch store at Rome, Ga.

J. J. Wright, Washington, is now running the business at the former stand of Hill & Watson.

H. H. Arrington, the worthy secretary of the Georgia Pharmaceutical Association, is making his preparations to take in the World's Fair this summer, and would like to correspond with John Sprague and Ray Stauffacher as to the best plan of seeing the great exhibit without too much loss of time.

T. F. Burbank, Cedartown's live druggist, will be on hand at the Georgia Pharmaceutical Association meeting, prepared to go to Chicago.

Paul Reese, formerly the head man with D. W. Curry, of Rome, has now opened out for himself. He has a well selected stock and is unusually popular, and it goes without saying that Paul will succeed. All of his friends will be glad to see him do so.

Crouch & Watson, Rome, do a very large prescription business. They have a very agreeable coterie of medical men in their building, and you can find no place in Rome where you will be more cordially welcomed.

Villa Rica enjoys the newest and latest fad in the way of drug titles; the leading drug store there is called "The P. M. D. Drug Co."

Percy Magnus, formerly a representative drug drummer, is now manager of the Crown Perfumery Co., and has quite a lucrative position.

One of the most diligent of business men is R. B. Evans, the successful manager for that large concern in Atlanta, the Lamor Rankin Drug Co. Mr. Evans is one of the representative business men of this thriving city, and makes a most excellent manager for this concern.

Mr. Martin, the clever assistant of R. B. Evans, at the Lamor Rankin Drug Co., Atlanta, picnicked at Tallulah Falls recently, and his story of the dinner spread there is like the story of the feast prepared for the gods.

J. A. Polhill, the clever traveler for H. J. Lamor & Son, of Macon, is circulating amongst his South Georgia friends this month. Mr. Polhill has scores of friends in the drug trade who are always glad to see him.

Norman Shelverton, of Macon, has increased in avoirdupois to such an extent as to be hardly recognizable.

Sellman & Duke, Douglassville, besides doing the leading drug business in their section of the State, do a very large jewelry business as well. Dr. Sellman is one of the leading doctors in the town, and Mr. Duke is a most successful business man.

⁂

ILLINOIS.

Oetzel & Torrance, of Danville, are now in their new store. They keep one of the neatest stocks in the city.

A. Esslinger, of Danville, has lately added a cash system, with special lady attendant. It gives his room an increased air of business.

Wm. W. Marmon, wholesale druggist, of Bloomington, who has been indisposed, is back at his desk again and as full of business as ever.

A. D. Loar's place at Bloomington has been raided twice lately by burglars. The loss was considerable each time, and Mr. Loar feels that he has contributed his share.

Utley & Schlierbach, wholesale druggists at Springfield, have dissolved. Dr. Utley will continue the business, while Mr. Schlierbach takes a place with the Economic Drug Co., of Chicago, as buyer.

⁂

MINNESOTA.

F. C. Hamen, for some time past at Dr. Harra's pharmacy at Minneapolis, has accepted a position with F. W. Krugler & Co., 127 E. Superior street, Duluth.

The firm of Sadler & Krohn, of Duluth, has been dissolved, and in the future the business will be carried on by Geo. J. Sadler. Mr. Krohn will have charge of Peterson & Co.'s pharmacy at 1542 W. Michigan street, Duluth.

Charles F. Saylor, for some years past with Gibbs & Son, of Lake City, has engaged with the "Duluth Drug Co." at their elegant new pharmacy, 201 W. Superior street, Duluth.

Will A. Abbett, who for some time past has been in charge of the prescription department of F. W. Krugler & Co. at 127 E. Superior street, has connected himself with the new firm, Duluth Drug Co., and will, with A. E. Le Richeux, attend to the management of the Superior-street store. Mr. Abbett may congratulate himself on being able to step into the business of this already well known firm, and the firm may feel that in Mr. Abbett they have secured a prize.

H. J. Cameron, for some years past first prescription man for S. F. Boyce, of Duluth, will take a summer's rest, which he much needs. The fish and game in the northern part of the State will suffer till his return.

Dr. C. E. Wilber, of Hinckley, will shortly open a pharmacy at that place.

N. J. Benson, Tower's live druggist, has moved into his new brick block, and with his polished oak fixtures, all new, and the elegant new soda-fountain, steam heat, electric lights, etc., will show the people on the "Vermilion Range" that he proposes to accommodate them in as elegant a manner as they could ask. The new store will be divided into different departments for Mr. Benson's several lines of goods. The drug department will occupy the main southwest corner, its room being 50 feet deep and 25 wide. This department will be under the exclusive management of E. W. Cummings, who has displayed great taste and ability in the interior arrangement of the store.

F. B. Johnson, who has been clerk for N. McFadden, at Brainerd, for twelve years, has purchased the latter's stock and will continue the business in the same quarters.

The business heretofore carried on by Johnson Bros., Brainerd, will hereafter be run under the name of C. D. Johnson. He has moved into new quarters, made elaborate decorations, and added a soda-fountain.

⁂

NEW YORK.

Brooklyn:

W. F. Goerdes, successor to the late Otto Gillig, at 197 Bedford avenue, has removed his business to a handsome new store at 578 Driggs avenue, one block above. Counters and floorings of marble, mirrors galore, white and gold paint very much in prominence, and a quartette of singing birds, make a feast for the eyes, while the sterling reputation of the proprietor has found its reward in the confidence of the people on the North Side.

Owing to the widening and grading of North Second street, L. C. Bossardet's Family Medicine Store has been in a state of upheaval and removal for the past month. Alterations are now completed, and our friend, when he notes the much improved condition of his store, must feel paid for the inconvenience to which he has been put. Paint and wall-paper selected with care and a liberal hand have done much to beautify this property.

W. C. Wagner's Amphion Pharmacy has removed from 441 to 435 Bedford avenue, and thereby hangs a tale. It seems that the directors of the Amphion Company refused to allow the sale of cigars, as a tobacco store occupied the opposite side of the Theatre Arcade; while these gentlemen were awaiting Mr. Wagner's compliance with conditions, he quietly leased a large store, more suited to his needs, three doors below, and is now receiving the congratulations of friends and selling cigars as a side line.

The general apathy in trade at present seems not to affect to any extent the rush at Max Zagat's Sand-street pharmacy. Mr. Zagat is to be congratulated upon the plane to which this store has been brought by his skillful management.

It is again demonstrated that "Nothing succeeds like success." C. F. Sautter has opened at 382 Bedford avenue a branch of Sautter's Medical Hall. On the opening night Mr. Sautter gave handsome souvenirs, in the shape of thermometers, to all who accepted his invitation to call and inspect the new palace of pharmacy. Many of the neighboring pharmacists accepted his invitation, and were delighted with all that they saw. Mr. Sautter has anticipated the warm, dry spell by erecting an immense soda-fountain, which extends some *thirty-five feet* along one side of the store. The Medical Hall trademark, a silver mortar and pestle, is everywhere prominent. There is no doubt this branch store will prove a success.

Andrew J. Shields, of 165 Hudson avenue, has attained the success that the BULLETIN wished him some time since; residents in the neighborhood of the Navy Yard, and denizens thereof, know the shortest route to Andy's, while the medical men in the vicinity gladly recognize this genial dispenser.

North Siders continue to point with pride to the pharmacy of R. C. Knipe, of Grand street. If elegance of interior and exterior, a complete stock, an efficient corps of pharmacists, and the personal supervision of Mr. Knipe, count for anything, surely patrons of this well known dispensary are justified in their conceit.

C. A. Mincho & Co., successors to Wheeler & Bolton, of Myrtle avenue, have adopted a striking trademark in the shape of a small red Maltese cross, throwing rays from the upper half. It appears upon every package which leaves the store, and it has a startling effect upon the label of a two-ounce prescription bottle that is certainly original and attractive.

⁂

OREGON.

Portland:

The new drug store of Ockerman-Deitrich Co., on Washington street, corner of Sixth, being completed and opened to the public, this city can now claim possession of the best arranged and most elegantly furnished pharmacy in the Northwest, if not on the Pacific coast. The fixtures of the store are of antique oak, with elaborate trimmings of oxidized brass, while the decorations, which are most artistic in design as well as in coloring, are exquisite. A commodious and neatly furnished waiting-room has been provided, in the hope that it will be freely used by the ladies while shopping, waiting for a car, or any other purpose to which it may be adapted. The very best current literature will be freely supplied. Everything being new in the new store, much new stock has been added. The very finest goods will be offered in every department. Both gentlemen comprising the firm are thorough, practical pharmacists of many years' experience, and their patrons can be assured of most reliable service.

H. W. Little, for a number of years connected with many of Portland's leading stores, assumes management of Nob Hill Pharmacy.

A. Hillier & Co., formerly owners of Nob Hill Pharmacy, are opening a very fine store in Albina.

Woodward, Clark & Co., Wisdom Drug Co., and other First-street druggists, are preparing for a repetition of the 1890 flood, at which time business was principally conducted in boats.

⁂

PENNSYLVANIA.

Sam S. Jones & Co., successors to Nat Wolfe & Co., Wilkes-Barre, have made quite extensive improvements in their already handsome store, and now have one of the largest and best equipped wholesale and retail stores in the State. We are glad to notice that they are doing a very flourishing business, and bespeak for the new firm great prosperity and success.

Evans & Son, of Kingston, Pa., recently took possession of their new building, and now occupy one of the neatest and most convenient stores in the Wyoming Valley. It is a pleasure to visit and inspect so handsome and modern an establishment. We have no doubt that their well earned prosperity will be increased by their improved facilities for meeting the wants of their customers.

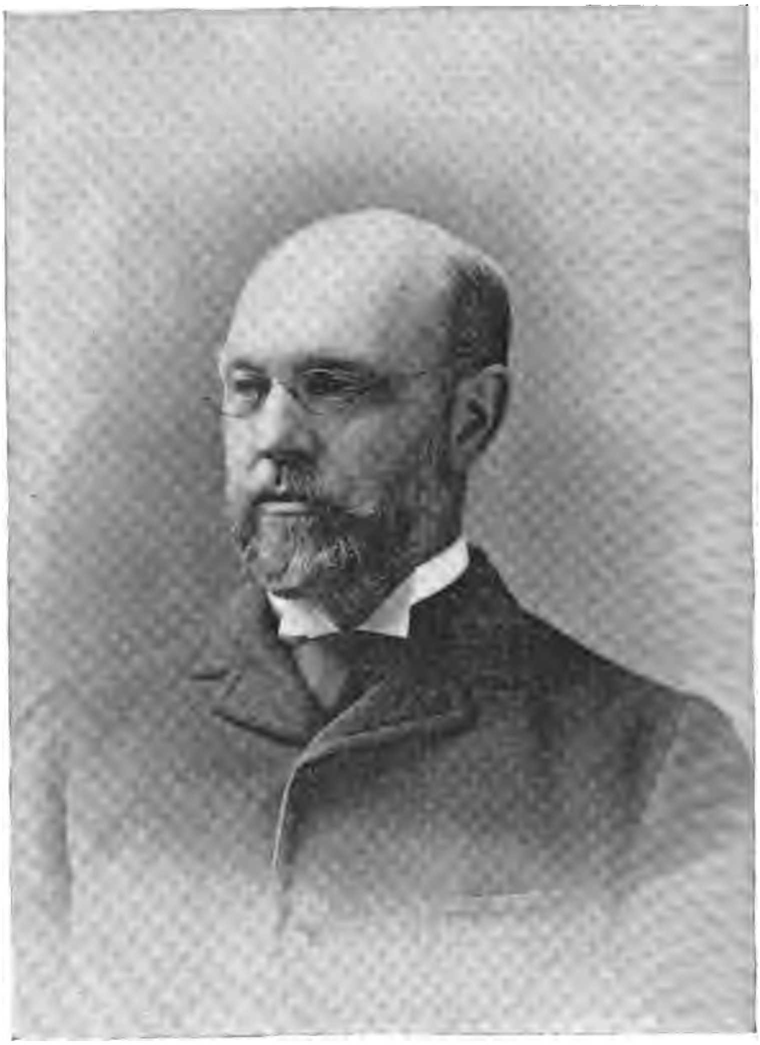
⁂

WISCONSIN.

The Draper Drug Co., of West Superior, have divided up their stock formerly located at No. 616 Tower avenue, added largely to the stock, and opened up a store at 1420 Tower avenue and one at 1719 Third street. This gives them exceptional opportunities at each end of the city.

Matt. J. Johnson, of West Superior, who was so badly scorched at the time of the big fire of Hotel Tower, has again guided his boat into smooth water, and his new store at 627 Tower avenue is slowly but surely gaining ground. The new location is far superior to the old; and while we wish Mr. Johnson all success in his new stand, we shall not claim any credit on that account for the success that is sure to come.

Somerville & Dear, the wide-awake pharmacists at 1001 Tower avenue, West Superior, have displayed great taste in the arrangement of their new store, and the recently added new soda-fountain (which is indeed a beauty) will be appreciated by their many patrons. Mr. Somerwille is one of West Superior's oldest druggists, and it is with pleasure that we see this new firm step into the line of Wisconsin's foremost pharmacists.



Ira Remsen

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INDEX OF CONTENTS.

Editorial. PAGE

Ira Remsen 289
Science versus Humbug 290
Fire in Drug Stores 291
A New Fad in Therapeutics 294
National Wholesale Druggists' Association 295
A Modern Instance 295
The Pan-American Medical Congress Excursion at Rome 296

Original Articles.

PRACTICAL PHARMACY.

Notes on Some Animal Oils and Fats Used in Pharmacy. By P. L. Simmonds, F.L.S 296
The Pungency of Soda-Water. By Thomas Warwick 299
Therapeutic Notes of Interest to Pharmacists. By Dr. H. M. Whelpley, Ph. G 302

CHEMISTRY.

Letters from Dorpat. By Professor Rudolph Kobert 303
Hydrastis Canadensis. By F. A. Thompson 305
Pepsins. By L. A. Harding, B.Sc., Ph.D 307
On Syrup of Calcium Lactophosphate. By H. W. Aufmwasser 307
Darkening of Syrup containing Ferri Phosphas, U.S.P., Due to Partial Reduction of its Ferric Salt to Ferrous by Sunlight. By W. H. Wearn 308
Nut Cracking 309

Correspondence.

Paris Letter 311
Londen Letter 312
Berlin Letter 314
New York Letter 315
Attention, Drug Trade 316
Chicago Letter 316
Pan-American Medical Congress—Section on Gynæcology and Abdominal Surgery 317
Meeting of the Missouri Pharmaceutical Association 317
Imports of Drugs, etc., at the Port of New York, for the Month of June, 1893 318
Book Reviews 319
Facetiæ 320
Abstracts and Translations 321
Pharmaceutical Progress 325
Notes and News 331
Trade Supplement 335

IRA REMSEN.

The subject of this sketch was born in New York City in 1846. In 1854 the family moved to the country (Rockland County, N. Y.) on account of Mrs. Remsen's health, and there Ira lived and attended school for three years. His education was continued in the public schools of New York City, from 1857 (when the family renounced rural life) till 1860, when he entered what was then the Free Academy, now the College of the City of New York. Remaining there until 1863, he then left to study medicine. Received the degree of Doctor of Medicine from the College of Physicians and Surgeons, New York, in 1867, having spent a year (from June, 1865, to June, 1866) in Europe in general study. After graduating in medicine he decided at once to give up that profession, for which he had little taste, and to pursue the study of chemistry, which was very much more to his liking. He went to Munich in 1867 (being then 21 years of age), in the hope of being able to work with the great Liebig. But Liebig at that time did not receive students in his laboratory. He therefore entered the laboratory of Volhard, a nephew and former assistant of Liebig, and at the same time attended the lectures of Liebig during the year 1867–68. At the advice of Volhard, he then went to Göttingen to continue his studies under Wöhler and Fittig. He had the pleasure of meeting Wöhler in Liebig's house in Munich, and, on arriving in Göttingen, was most cordially received by the great chemist. Remained in Göttingen until the spring of 1870, when he received the degree of Ph.D.; his thesis was on "Piperic Acid and Some of its Derivatives."

At this time Professor Fittig was called to Tübingen as the successor of Strecker, and he invited the young doctor to go with him as assistant—an invitation which was gladly accepted. Two years were spent in this position, and during this time Dr. Remsen gave instruction in the laboratory, prepared the lecture experiments, carried on independent researches, and gave private instruction to candidates for the degree of Doctor of Science.

In 1872 he returned to the United States, and in the autumn of that year entered upon the duties of Professor of Chemistry and Physics in Williams College, Massachusetts. Four years were spent here. During this time he carried on several experimental investigations, the results of which were published in the *American Journal of Science* and in the *Berichte der Deutschen Chemischen Gesellschaft.* Among these may be mentioned: "Investigations on Parasulphobenzoic Acid," "The Action of Ozone on Carbon Monoxide," and "The Action of Ozone on Phosphorus Trichloride." He also wrote "The Principles of Theoretical Chemistry," which was published in 1876 by Henry C. Lea & Co., of Philadelphia, having previously completed a translation of the well known Wöhler-Fittig's "Outlines of Organic Chemistry," which was published by the same firm in 1872.

In 1876 he was called to the Professorship of Chemistry in Johns Hopkins University, Baltimore, and this position he has occupied ever since. Here, with excellent opportunities, he has been enabled to carry on experimental investigations on a variety of subjects, and build up a large and active school for the training of chemists. His summer vacations have been largely spent in the preparation of a number of text-books, now extensively used not only in this country but abroad. Among the many investigations carried on by him, either alone or with his students, the following may be mentioned: "The Oxidation of the Substitution Products of Aromatic Hydrocarbons;" "Active Oxygen;" "Chemical Action in the Magnetic Field;" "The Sulphinides;" "The Sulphonphthaleïns;" "The Structure and Nature of the Double Halides;" "The Structure of Sinapic Acid;" "The Action of Alcohols on Diazo-Compounds," etc. Besides these investigations in the field of pure chemistry, he has also worked on subjects in the field of applied chemistry, as, for example, "Organic Matter in the Air," "Carbon Monoxide in the Air of Rooms Heated by Cast-Iron Stoves or Furnaces," "The Glucose Industry of the United States," "A Peculiar Condition of the Water of Boston in 1881," etc., etc.

In the course of the investigations on the sulphinides, mentioned above, that remarkable substance which has since come into prominence under the name of *Saccharin* was discovered. Professor Remsen has, however, never reaped any pecuniary reward from this discovery.

In 1879 he founded the *American Chemical Journal,* now in its fifteenth volume. This journal was a necessity, as there was then no publication of the kind in this country. It has been a success from the beginning.

In 1885 he wrote "An Introduction to the Study of the Compounds of Carbon," which was published by D. C. Heath & Co., of Boston. This was most favorably received. An English edition was issued by MacMillan & Co., and the book was soon translated into German and Italian; it is now being translated into French.

Many requests were now received by him to prepare other text-books, and the following year he agreed to prepare a series for Messrs. Henry Holt & Co., of New York. These books appeared in rapid succession and in the order named: "An Introduction to the Study of Chemistry;" "The Elements of Chemistry;" and "Inorganic Chemistry." All of these have been issued in England by Messrs. MacMillan & Co., and all have been translated into German. Further, the "Elements" has been translated into Japanese. In this connection it should be noted that the "Principles of Theoretical Chemistry" has also been translated into German and Italian, and is now in course of translation into French and Spanish.

Professor Remsen was elected a member of the National Academy of Sciences in 1882. The honorary degree of LL.D. was conferred on him by Columbia College, New York, in 1893.

A few years ago, during the absence of President Gilman in Europe, he was Acting President of the Johns Hopkins University. He has received many calls to other places, the last of which was from the University of Chicago, but has declined them all.

SCIENCE VERSUS HUMBUG.

Owing to the temporary absence of the editor, and the relegation in the interim of the management of the important Scissors Department of this periodical to another, an item appeared on page 283 of the June number of the BULLETIN OF PHARMACY which does not represent the views of its editor, and should not have appeared, since it is calculated to carry a wrong impression.

Our readers are probably aware that the proprietor of a certain nostrum, called Radam's Microbe-Killer, has seen fit to bring suit against the *Druggists' Circular* of New York, and Dr. R. G. Eccles of Brooklyn, for alleged libel. It appears that Dr. Eccles published in the *Druggists' Circular* an article which covered a report of the result of his analytical examination of the nostrum above referred to. The proprietor of the nostrum, assuming that there would be some advertisement in a contest at law, brought suit for $200,000 damages. The case was decided some time since in favor of the plaintiff, but with purely nominal damages. Instead of $200,000 by way of a salve for the injured feelings of the proprietor of the Microbe-Killer, he realized but $500, which sum was divided against the three defendants, or $166.66 each. Ten of the jurymen, we are informed by Dr.

Eccles, stood for six cents damages, while two held that a larger sum should be assessed.

We insert a letter from Dr. Eccles, published in *Merck's Market Report and Pharmaceutical Journal*, June, 1893:

Brooklyn, N. Y., May 20, 1893.

To the Editor of Merck's Market Report:

Knowing your sympathy and that of your readers for every one that aims at correcting the patent-medicine evil, permit me, through your columns, to give in brief form the result of the recent libel suit instituted by Mr. Radam against this correspondent and Messrs. Allison and Lillard of the *Druggists' Circular*. The case began on the morning of May 1st, and the jury rendered their verdict on the 9th.

Our attorneys, in drawing up our pleadings, followed the directions of Townsend's well-known text book on "Libel and Slander." Mr. Radam's attorney, when our first witness was placed upon the stand, objected to his testimony on the ground that the Court of Appeals of this State had ruled that, when pleadings in a libel suit are drawn up in general form and where each point intended to be defended is not explicitly stated point by point, no defense is permissible. Our attorneys had briefly asserted that all I had written about Mr. Radam and his preparation was true, and therefore justifiable. The court ruled against us, and thereby decided the case in favor of Radam, before a single word of our evidence had been heard.

Nor was this the worst. We were not permitted at any time to introduce a particle of evidence to prove the truth of my statements or to justify them in any manner. We were prepared to substantiate every point and could not possibly have failed in convincing the jury of the righteousness of our cause, had we been permitted to do so. Solely on the strength of a legal pitfall, was it decided against us; and only by virtue of evidence they unintentionally called forth, together with a few scraps of evidence that had escaped destruction from the time the article was written, were we saved from heavy damages. Their own witnesses were forced into acknowledging the truth of a number of the points that were alleged to be libelous. My analysis was tacitly acknowledged to be true, and their own patent declared that Sulphuric Acid was present in the preparation. They tried to show that such a combination of mineral acids would have curative power, and would display great originality on the part of Mr. Radam for combining them. It is thus seen that they practically acknowledged everything regarding its composition to be what the analysis claimed.

In the Brooklyn trial their own chemist swore that he had found in it everything my analysis showed was present. In the circulars of the various companies it is positively asserted that it is "simple water, air, and electricity combined." Mr. Radam swore before a notary public that he never used any sulphuric acid or hydrochloric acid in its preparation; and yet before that, when taking out his patent, he swore that it *did* contain sulphuric acid. He ought to reconcile these oaths so that the public may know what he means. All along, the circulars and advertisements of the companies have asserted that the claim that Radam's Microbe-Killer contained sulphuric acid, was the main feature of the libel. Now they say this was not libelous at all.

Another of their great grievances was my claim that it cost them less than five cents per gallon to make it. Mr. Goodman, his principal agent, very reluctantly was forced to figure out the cost of a gallon while under oath and before the jury. By giving retail prices for each ingredient, the highest he could raise it was to between one and a half and two cents per gallon. They charge three dollars per gallon! Thus by their own mouths we condemned them.

Mr. Britton, a former agent, swore that when introducing the Microbe-Killer into New York, he had caused to be published in the New York *World* an advertisement containing pictures of diatoms and the trachea of an insect that were put forward as germs of disease. Some of the diatoms shown were some fossil forms that no longer live on the earth; and others were forms that only exist in the waters of the Pacific Ocean. The trachea was magnified about seven times, while they claimed it was magnified a million times and was a germ of malaria. This bogus advertisement was distributed to the public from the Broadway store of the Microbe-Killer Company, and was headed "A Microbe Microscoped."

About the same time Mr. Radam himself testified in a Texas Court that a microbe is impure air; that pure air is oxygen, and impure air nitrogen. All this evidence came from their own witnesses.

The jury, after six hours' debate among themselves, brought in a verdict of $166⅔ against each defendant, instead of $200,000, as asked. Ten of them stood out for six cents damages, while two held that, as *a verdict of $6,000 was given by a Brooklyn jury* to your correspondent and against Mr. Radam, they thought, since my words against him were more severe than his against me, that a balance should be struck and part of that money returned. Had we been permitted to put Mr. Radam on the stand or had they dared to have him testify in his own behalf, the two jurors would have seen why such a balancing of accounts was wrong. A man who permits pamphlets, copyrighted by himself or by his companies, to speak of him as a "great scientist," a "botanist," and "the most learned and profound of living American naturalists," when he has not even a knowledge of the simplest rudiments of natural history or botany, only needs to be heard to be known at his true worth.

R. G. Eccles, M.D.

191 Dean Street.

That we are right in our assumption that the case against Dr. Eccles was based upon the desire for notoriety or advertising rather than upon any real ground for damages, we point to the fact that the local newspapers carry several columns of advertising space devoted to Radam's Microbe-Killer, in which they call attention, by means of display type, to the fact that Dr. Eccles has been defeated, with damages, and to the testimony of witnesses in favor of the wonderful curative effects of the Microbe-Killer.

It is to be hoped, if the New York law excludes such evidence as the *Druggists' Circular* and Dr. Eccles were prepared to submit in proof of the solidity of their position, that the law will be changed or new laws made whereby the public may be protected.

Dr. Eccles and the *Druggists' Circular* have both been actuated by a desire to benefit humanity, and it seems a shame that they should be punished by a court and crippled in their future effort simply at the request of the mercenary proprietor of a medical humbug.

FIRE IN DRUG STORES.

A drug store was recently destroyed by fire which originated in a natural but unusual manner. A can containing water and several large sticks of phosphorus had rusted, a hole was opened and the water gradually leaked out and evaporated. The phosphorus, thus exposed to the warm atmosphere, ignited during the night, and, as no person was present, the flames spread over the shelves and other inflammable material, and gained good headway before being discovered.

We once read of a country druggist who had sold gunpowder at retail by lamp-light for over twenty years, and never found fault when customers or loungers leaned against the counter and smoked while he poured it out. One night in the twenty-first year, however, there came a—whish!—bang!—boom!—Three men killed—no more powder—no more drug store—no insurance. Many druggists carry on business for years without consideration for fire precautions, but they, like our rural friend, are apt to be suddenly interrupted.

The causes from which fires can occur in drug stores are numerous; and in most cases the origin is difficult to determine, since it is the interest of those at fault to suppress all evidence. Few fires have occurred which might not have been prevented by exercise of common prudence, and many such calamities are attributed to "accident" when they really result from the laziness or recklessness of an employé, or lack of vigilance on the part of the proprietor.

Matches are, as everybody knows, specially designed to start combustion, and their use and storage must therefore be subject to careful restrictions. Don't allow them to lie around loosely or in paper boxes. They should be protected by closed metal safes, out of the reach of rats and investigative juveniles. Receptacles should be provided for burned matches; throwing these upon the floor is a phase of carelessness to be discouraged. Matches should not be kept in the pockets of shop coats or overalls, where they may be ignited by friction against each other or by rats. When a match accidentally falls upon the floor in a cellar or store-room, never leave it there to be stepped upon and cause conflagration.

Gas jets present a constant menace. Wall brackets of gas-pipe should not be placed near to, or underneath, sections of shelving, as paper parcels on shelves above them may be left protruding and become ignited by heat from the flame. When pressure is increased by turning off other burners in the same building, or at the gas-works, the flame from a gas jet will frequently leap one or two feet into the air, and perhaps reach a wooden ceiling or overhanging timbers. Large metal shields placed above the burners, near but not in direct contact with the woodwork, afford protection in such cases. Jointed swinging gas-brackets are particularly dangerous, as they are almost invariably capable of swinging the flame into contact with some woodwork or other inflammable material. Fires have repeatedly spread from the upper portion of an inside blind or a curtain swinging over a lighted wall-bracket.

Certainly everyone has read of the man who carried a candle into the cellar to search for a leakage in the gas-pipe—and found it. Special care must be exercised in the use of gas-lights, lanterns, and candles, in the cellar. The use of ordinary kerosene-oil lamps in the cellar is almost certain to lead to disaster. Remember that kerosene-oil lamps are more likely to explode when nearly empty than when full. It is a safe rule to prohibit the use of lights in the cellar altogether; necessary business can usually be transacted in this department during the day. When, however, the cellar has to be explored after dark, closed lanterns will usually answer all requirements, and are much safer, provided they are lighted in the store beforehand.

The writer recalls a destructive fire which was started by a candle which, instead of being placed in a metal candlestick, had been impaled upon a nail driven through a block of wood. This was left burning in the cellar by an errand boy in the evening, and during the night the candle burned down and set fire to the wooden base and boxes upon which it was standing.

It is an established and well known fact that sawdust or rags saturated with vegetable oils are dangerously liable to spontaneous combustion; these should therefore not be left carelessly about. For the same reason, overalls should be hung up loosely to permit free circulation of air, and sawdust should not be used to catch drippings from oil-tanks or barrels.

Owing to its spontaneous inflammability when exposed to atmospheric oxygen, phosphorus must be handled with appropriate circumspection lest it cause serious conflagration, or, what is incomparably graver, personal injury. It is safest to cut phosphorus under water. Although it can often be dried on a soft towel and cut in the air without ignition, this operation is always attended with more or less danger. In drying and weighing phosphorus, always handle it with forceps, the heat of the hand being sufficient to raise its temperature dangerously near the point of ignition.

In this connection it may be of interest to note that the addition of ether to phosphorated oils reduces or entirely prevents phosphorescence in the dark, or the production of white vapors on exposure to atmosphere.

Storage of phosphorus in the pharmacy or laboratory is always attended with considerable danger from fire, and the customary method of keeping it in a bottle of water will not permit its being placed out of doors during the winter season.

In view of all this, the following arrangement was devised, and has been employed for something over four years with gratifying results: (1) Place the phosphorus in a wide-mouth bottle or jar containing a sufficient quantity of a 25-per-cent. solution of common salt. (2) Place this bottle of solution in a crock with earthen cover, containing glycerin enough to immerse the body of the bottle, leaving only the neck exposed. (3) Protect the crock by surrounding it with a layer of sawdust or asbestos fibre packed in a suitable box with close-fitting cover.

A 25-per-cent. solution of common salt will preserve phosphorus quite as well as pure water, and will retain its fluidity at a very low temperature, considerably below zero. In case the bottle should by accident be broken, the phosphorus is deposited in the glycerin, which will protect it perfectly and is also capable of withstanding cold. If the box affords due protection, the liquids will rarely reach zero in the most extreme weather.

Many drug stores have been injured or destroyed by conflagration resulting from accidental breakage of carboys of nitric acid in the cellar. When sufficient quantities of this powerful oxidizing liquid are brought in contact with vegetable substances such as hay or tow, excelsior, paper, sawdust, etc., fire is apt to occur. Remembering the value of carbonic acid gas as a fire extinguisher, a profusion of carbonate-of-soda solution should be promptly applied, or a mixture of chalk and water may be made to serve in an emergency.

Metal boxes or pails should be provided for the reception of waste paper, rags, and other refuse. It is considered unsafe to use wooden vessels for this purpose. Refuse boxes should not be pushed under tables, shelves, or other woodwork to which flame would be communicated in case of fire from spontaneous combustion, but should occupy a conspicuous place in the open room, where they are more apt to be kept clean and receive proper attention. It is a safe rule to have them set out of doors during the night.

Sawdust or rags used in cleaning greasy mortars, graduates, and other utensils, should not be thrown into the dirt bucket, but rather burned or placed outside the pharmacy at once.

It is appropriate here to recall a fire which originated in a jewelry store from rays of sunlight which, being focused through some large reading-glasses displayed on a rack in the window, set fire to a velvet curtain. Pharmacists are of course subject to similar consequences from show globes in windows.

Spontaneous combustion of compressed tablets of potassium chlorate and ammonium muriate has been made the scapegoat for a large number of fires. In the writer's experience the behavior of these tablets has been no more offensive than potassium chlorate alone. Reports of this kind of spontaneous combustion have the flavor of ghost stories. We often meet a person who knows someone who has seen a ghost, but we have never either inspected the ghost itself or seen anyone who has.

Ointments, plasters, and similar combustible material should not be fused over an open gas flame or fire without the intervention of a sand or water bath. Drippings running down the side of the vessel may conduct the flame to the entire contents, causing serious conflagration, which may result in injuring the operator and destroying the premises.

Alcohol, ether, and benzin, or preparations containing them, should never be evaporated over or near open flame, owing to the inflammable nature of their vapors.

Benzin is probably the lightest and most dangerously inflammable liquid commonly handled by the pharmacist. Its storage in barrels is both hazardous and wasteful. In most cases it will be found quite as profitable and much safer to keep a stock of only five or ten gallons in a *tin can*, which should be stored remote from combustible material, fires, and lights. In case of leakage, the premises may become filled with its vapor, which is extremely inflammable and explosive, and if ignited would create havoc.

Turpentine is to be regarded as dangerously inflammable. It burns with a strong, persistent flame.

Bulk stock of benzin, ether, bisulphide of carbon, kerosene, turpentine, and other inflammable substances, is frequently stored in small buildings which, while accessible, are sufficiently remote from the pharmacy to prevent a communication of flames to it in case of accidental ignition. It is also a good plan to store gun cotton and similar explosives with the combustibles where their explosion during a conflagration will do the least possible damage.

Lycopodium, although not particularly inflammable in substance, explodes with a vivid flash when ignited in the form of floating powder. It is therefore imprudent to openly transfer or handle large quantities of it in too close proximity to a flame.

Don't encourage incendiarism by leaving heaps of straw, papers, and boxes about the premises. Straw, papers, and other combustible material should not be allowed to accumulate in the space underneath grates opening through the sidewalk. Many fires have been started by a burning match or lighted cigar carelessly dropped by pedestrians.

Smoking on premises, by employés, should be strictly prohibited.

It is a common mistake among pharmacists to believe that the vapor of chloroform is as dangerously inflammable as are the vapors of benzin, ether, and benzol, probably because chloroform is extremely volatile like the others. As a matter of fact, chloroform and its vapor tend to extinguish flame rather than feed it.

Remember that by prompt application a bucket of water will often extinguish a fire which would soon be beyond control if action is delayed. Suitable apparatus for extinguishing fire in its incipient stages should be kept at hand, and employés should be thoroughly familiar with its location and use. Fire apparatus should always be placed near the entrance to a room, where smoke or fire will not cut off access to it. A dozen buckets, covered with a loose plate of tin, painted red, and labeled "To be used in case of fire only," should be distributed through the cellar and manufacturing rooms within easy reach. A small force-pump, such as is frequently used for washing windows, kept in a bucket of water, serves as a cheap and efficient fire-extinguisher, and is less likely to get out of order than more complicated apparatus.

A small alcohol blaze can easily be blown out with the breath, but a flame of dangerous size is most readily extinguished by dashing water *across* the surface of the liquid or floor. If in an open vessel, prompt closure with a loose cover will subdue the flame by cutting off the supply of air. Remember that fire cannot burn without a supply of air. Smother it if you can.

Remember that soda-fountains can be made to serve as excellent fire-extinguishers. Two men can easily carry a small fountain to a point from where its carbonated contents can be emptied onto a fire.

Hand grenades have fallen into a richly merited state of "innocuous desuetude," and little reliance should be placed upon them for extinguishing fires in drug stores.

Where fire-shutters are capable of preventing communication of fire to the premises from adjoining buildings, in the rear or at the side of the pharmacy, they should certainly be applied, and invariably closed and locked at night. Heavy shutters and doors of wood covered with block tin are considered more serviceable than iron shutters.

Fire precautions not only confer a degree of safety, but materially reduce the rate at which insurance can be secured.

Permanent paper labels on stock-containers should, so far as practicable, be kept varnished. In case of fire, great damage often results from the loss of identity of pharmaceuticals through washing off of labels by water used in extinguishing flame. Ordinary shipping tags, bearing the name of the contents, are well protected by sizing with glue and varnishing on both sides. Ordinary ink or pencil marks on unprotected labels are soon obliterated by action of damp air in a cellar.

During the excitement incidental to a fire, don't forget that the prescription records rank among your most valuable possessions. Some neighboring druggist will be willing to repeat prescriptions for you until your plant can be re-established.

While one person is engaged in an attempt to extinguish the fire, another should promptly proceed to turn in an alarm.

Escape from a burning building can often be effected by creeping on hands and knees to a window, door, or staircase. The atmosphere of a room so full of smoke as to cause suffocation of a person standing upright, can generally be safely breathed near the floor. Several folds of wet cloth, or even a damp handkerchief tied or held over the mouth and nostrils, will often enable people to pass through dense smoke.

Don't neglect to keep your stock insured.

L. C. F.

A NEW FAD IN THERAPEUTICS.

In the *New York Medical Journal* for Jan. 28, 1893, appeared a paper accredited to Dr. Wm. A. Hammond, entitled: "On Certain Organic Extracts, their Preparation and Physiological and Therapeutical Effects."

This paper treated upon the question of the therapeutic application of extracts of animal tissues. It was a continuation of the theories of Brown-Séquard, Bogroff, Zenetz, Bock, and Constantin Paul, and *prima facie* appeared to be a sincere and scientific effort on the part of the author; at all events, aside from any question which might have been raised by those familiar with the professional and military records of the author, it ostensibly had the indorsement of the editor of a medical journal in high standing.

Misled by the assumptions as covered by the foregoing, a manufacturing pharmaceutical house, in its desire to cater to the demands of the medical profession, commenced a series of experiments based upon the formulæ published by Dr. Hammond, and demonstrated to its own satisfaction that the operation which the author declared demanded six (or more) months to complete, could be perfected in a very much shorter period.

With no thought of trenching upon the commercial interests of anyone, the results of the investigation were announced in an advertisement placed in the various medical journals of the land, in which it was stated that one of the animal extracts above referred to, entitled "Cerebrine" (because derived from the brain of the ox), could be furnished on demand, and that the same was manufactured after the formula of Dr. Hammond, save that the process had been reduced to six days.

The publication of this advertisement drew out a correspondence with Dr. Hammond and his attorneys, which covered threats of legal penalties for alleged infringement of *trademark*, and for fraudulent intent, covered in an article based upon Dr. Hammond's formula, but which was manufactured in much less time.

Incidentally the fact was announced that these "Animal Extracts" were manufactured in the laboratory of Dr. Wm. A. Hammond, under his own supervision, and that a New York Chemical Company only was authorized to advertise and sell the same.

These facts placed the original paper in a new light, and seemed to justify the inference that it was written for a commercial purpose. Following up this inference, two more facts were developed, namely:

First: That both "Cerebrine" as prepared by Hammond, and the same article as prepared by the manufacturing house above alluded to, in the hands of reputable physicians who had experimented therewith, were *not* capable, in many cases tried, of producing the physical and therapeutical effects claimed by Hammond in his paper.

Second: That Dr. William A. Hammond is the president of, and a large stockholder in, the Chemical Company of New York above referred to.

Although the controversy at present existing between Dr. Hammond and the manufacturing pharmaceutical house before mentioned may superficially appear as possessed only of personal character, there are several points involved which merit the careful consideration of all interested in either medicine or pharmacy. Among other queries, the following naturally suggest themselves:

1. Is it a culpable act on the part of either a physician or a pharmacist to act upon the recommendations of an author, as promulgated in an alleged scientific paper, in a scientific periodical, and purporting to have its origin solely in the interests of medicine *per se*, and therapeutics in particular?

2. Is it just that a pharmacist, misled by the publication of such a paper, should be persecuted legally, or by personal attack?

3. Is it proper to lend the columns of the medical press to the dissemination of pseudo-scientific literature and thus mislead those who are accustomed to look to this source for instruction and guidance?

NATIONAL WHOLESALE DRUGGISTS' ASSOCIATION.

We have received the following notice of the coming meeting in this city of the National Wholesale Druggists' Association, which we gladly publish:

The Committee of Arrangements and Entertainment beg to inform the members of the National Wholesale Druggists' Association that they have selected the Hotel Cadillac as the headquarters of the Nineteenth Annual Convention, to be held in Detroit from Sept. 11th to 14th inclusive. Opening business session, 8 P.M., Monday, Sept. 11th.

The committee would suggest that members who anticipate attending the convention write at once to the Cadillac, the Russell House, or the Hotel St. Claire, stating just what they require in the shape of accommodations. While the Cadillac, which is a most excellent hotel, has been selected as the headquarters of the convention, the Russell House and Hotel St. Claire are both prepared to take care of any guests who may come their way, and assure the committee of the very best of service. The Cadillac and Russell House are both conducted upon the American plan, and the St. Claire, which is entirely new, upon the European plan.

The committee wish to remind the members that Detroit is a place naturally adapted for entertainment. With its beautiful avenues and boulevards, its magnificent river connecting Lake Erie with Lake St. Clair, and its Island Park, which has no equal on this continent, it can offer to our members a form of entertainment which can only be obtained by a visit to the City of the Straits. This fact, coupled with the very important business which is to come before the meeting, will, we trust, bring the largest attendance in the history of the Association.

Hotel Rates.—Cadillac, American plan, $3.00 to $5.00 per day; Russell House, American plan, $3.00 to $4.50 per day; St. Claire, European plan, $1.50 to $3.50 per day.

Officers.—James E. Davis, Detroit, President; A. B. Merriam, Minneapolis, Secretary; S. M. Strong, Cleveland, Treasurer.

Committee of Arrangements and Entertainment.—Alanson S. Brooks, chairman; Frederick B. Perry, Thomas P. Cook, William M. Warren, Frank S. Hubbard.

For the Committee,
ALANSON S. BROOKS,
Chairman.

Detroit, Mich, July 18, 1893.

A MODERN INSTANCE.

"*The mills of God grind slowly, but they grind exceeding small.*"

Empires rise, gathering the strength of hoary centuries, and sink into nothingness like the Alpine avalanche. Mountains rear to heaven their bold and blackened cliffs, and bow their tall heads to the plain. Human nature is likewise subject to degeneration and decay.

History repeats itself, and all past experience has shown that when an individual assumes infallibility he paves the way to an inglorious fall into well merited oblivion.

The mental decadence of Wm. A. Hammond must be evident to anyone who has noticed his descent from a claimed scientist to the level of appropriating the ideas of others and claiming original discovery of them.

It might naturally be supposed that one who writes himself "Surgeon-General (Retired List)" would be sufficiently familiar with chemical and pharmaceutical processes to at least avoid a solecism, but such appears to be far from the fact.

When the oily Hammond declares it requires six months' (or more) maceration of brain substance for the manufacture of "Cerebrine" (so-called), and eight months to extract the virtues of the heart muscle, adding that he has found a year much better, we are bound to believe these statements have a commercial rather than a scientific basis.

The merest tyro in medicine or pharmacy, possessed of a modicum of common sense, would naturally imagine that the manipulation of organic matter should be completed with the utmost possible dispatch, in order to avoid putrescence and the consequent formation of septic principles; but this is a question which Hammond does not appear to consider worthy of thought. Is it possible he is not aware of the dangers of septicism? Or is it that he evinces in his paper the same disregard for human life and suffering that characterized his actions during the late civil war, and which led to his court-martial and subsequent retirement owing to disgraceful dismissal promulgated by no less a person than Abraham Lincoln?

As a matter of fact, microscopic examination of so-called "Organic Extracts" reveals the presence of bacteria; and cultures, moreover, evidence that these bacteria, many of them at least, are of a septic character.

But what else could be expected of preparations which are so unchemical and unpharmaceutical as to have floating therein shreds of epithelial matter, to say nothing of other impurities—preparations, too, which under control experiments proved to be devoid of any therapeutic virtue whatever?

Moreover, what can be said of a man who will trifle with suffering, assumably for personal gain—who will trademark his alleged scientific discovery, and charge for the marketed products a price that is most exorbitant—who details these as remedies for diseases which every physician knows are readily amenable to "faith cures," "Christian science," and other therapeutics of like ilk, and, moreover, are especially prone to spontaneously disappear without the intervention of any form of medicament?

THE PAN-AMERICAN MEDICAL CONGRESS EXCURSION TO ROME.

It has been definitely determined that the Pan-American Medical Congress excursion to the Eleventh International Medical Congress will sail on the steamship "Werra" from New York, Sept. 9th, the day following the adjournment of the Congress at Washington, and will arrive at Genoa Sept. 20th, four days before the opening of the Rome meeting.

Round-trip steamer tickets may be procured for $142.50 for inside rooms, and $150.00 and upwards for outside rooms. Tickets are good for members of the Congress and their families, and may be used at option of holder to return on any steamer of the line from Genoa, or on Saturday steamers from Bremen, or Sunday steamers from Southampton, during the months of October, November, and December. Physicians desiring to avail themselves of this exceptionally low rate should at once become members of the Pan-American Medical Congress by sending the registration fee ($10) to the Treasurer, Dr. A. M. Owen, Evansville, Ind., and informing the Secretary-General, Dr. Chas. A. L. Reed, Cincinnati, of their intention to join the excursion. Passage should be secured without delay, as the trip, involving as it will a stop at the Azores and Gibraltar and a sixty hours' sail along the picturesque coasts of Spain, France and Italy, promises to be very popular. Many prominent European guests of the Pan-American Congress will return on this occasion. The time allowed will afford American physicians an opportunity to not only attend the International Congress and visit Rome, but to extend their journey to the famous sanatoria of South France and the Riviera.

Query: If the active extract of brain, dubbed Cerebrine by Hammond, is of value, what is the matter with advising patients to dine on fried brain?

In the case of depressed genital vitality why not administer rams' fries?

Perhaps these queries will suggest a new department for the enterprising pharmacist of the future.

PRACTICAL PHARMACY.

NOTES ON SOME ANIMAL OILS AND FATS USED IN PHARMACY.*

BY P. L. SIMMONDS, F. L. S.

Having dealt in the BULLETIN with the vegetable oils used in pharmacy, a few details as to animal oils may not be out of place, omitting in this place their various economic and industrial uses.

The animal oils and fats are not nearly so numerous as those derived from the vegetable kingdom. The principal ones are: butter, lard, tallow, and horse-grease, from animals; and a great variety from fishes and marine mammals.

LANOLIN.—A modern adopted name for the wool fat, or refined grease, obtained in washing sheep's wool, which has lately been utilized for soap-making and other purposes.

It is an unctuous substance replacing in the sheep the sweat or perspiration transpired in other animals. This peculiar compound forms no less than a third of the weight of raw wool, from which it may be dissolved out by simple immersion in cold water, but more rapidly and effectually in warm water. It exhales an unpleasant odor, unless refined, and is antiseptic. It was formerly used in medicine.

Homer and other ancient writers refer to the employment of wool fat by the ladies of Greece for preserving the beauty of the skin. The purified preparation of modern times is infinitely better than the crude preparation of the ancients, termed "Sesypus."

It is now made into pomade, cold cream, and toilet soap. When fat is used for the administration of remedies which require to be absorbed by the skin, wool fat is superior to lard and vaselin.

In the Yorkshire wool mills, 12,000 tons of this wool grease are recovered annually. There need be no fear of the supply of lanolin running short, seeing that 744,000 bales of Australian wool and 118,100 bales of Cape wool were received in 1890, in the grease, or unwashed. Indeed, about one-fourth of the Australian wool and one-tenth of the Cape wool comes into the market unscoured, and the total imports into the United Kingdom in 1892 reached 737,500,000 lbs.

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* A continuation of this article will appear in the August BULLETIN.—ED.

MARINE OILS.

Under this term I include the oils of various fishes and mammals. But as in a former communication (BULLETIN for April, 1891, p. 151) I have spoken largely of the cod-liver and other medicinal oils, I need not enlarge here, merely adding a few notes to my former paper.

The use of fish oils, particularly that of the shad, is in vogue in the treatment of consumption in China. A yellow oil obtained from a fish called "Hwang-ku-gu" is used to destroy lice, and in veterinary practice. The cod is not known in Chinese waters, and no oil is extracted from the livers of fishes there.

CRAMP-FISH OIL.—The oil obtained from the liver of the *Torpedo occidentalis*, in the United States, is much valued by fishermen for the cure of rheumatism.

DOLPHIN OIL (*Platanista Gangetica*).—The oil obtained from this fluviatile cetacean is also highly esteemed in India for rheumatism.

LOSH OIL (*Lota maculata*, Lin.).—The liver of this fish, known on Lake Erie as the eelpout, and elsewhere as the burbot, affords a pint or so of rich oil, which the Russians in Alaska use in cooking; doubtless it might be used instead of cod-liver oil.

PIRARUCU OIL.—From this large fish (*Vastris cuverü*), of which there are great quantities caught in the Amazon and other rivers of Brazil, a concrete yellowish oil is obtained, of an unpleasant flavor, but much used as a relief for rheumatism.

BIRD OILS.

Among the animal oils or fats, that of birds has been the least investigated, probably because it is so seldom met with in quantity in commerce; and yet there are some localities where different kinds of bird oils have industrial, economic, and medicinal uses.

The fat or dripping saved when roasting a goose has a domestic reputation as an emollient, or healing application, for chapped hands, and other uses. It contains about 38 per cent. of stearin and margarin, and 62 of olein; that of the duck, 32 and 68 respectively; that of the turkey, 26 and 74.

Peacocks' fat is valued in Travancore and other parts of India.

In Cochin China, oil is extracted from the bodies of the many hundred thousand pelicans annually slaughtered for their feathers.

Father Labat (Nouv. Voyage, tome vi, p. 395) speaks of the virtues of the grease or fat of the frigate bird (*Tachypetis aquilus*). It is said to be an admirable specific in sciataca, numbness of the limbs, and other ailments arising from a want of circulation. The grease is to be heated, and while it is on the fire the parts affected are to be well rubbed and chafed in order to open the pores, and some good brandy or spirits of wine is to be mixed with the fat before it is applied.

Mother Carey's chickens (*Procellaria pelagria*) are killed in quantities in the Western Islands for their oil. They are so plump that the islanders merely draw a wick through the body, and it becomes so saturated with the liquid fat as to form a lamp without further process.

The fat of the heron was used medicinally in former times, being considered emollient and resolvent, giving ease in gouty pains, strengthening the sight, and said to cure deafness when introduced into the ears.

The passenger pigeons of North America (*Columba migratoria*) are another source of bird oil.

In Russia an oil is obtained from the yolk of eggs; it is semi-fluid at ordinary temperatures, of a deep yellow color, and is employed in cooking. It is used by the peasants for curing chafes and bruises, etc., and the less pure quality has been made into the celebrated Kazan soap, which is regarded in the light of a cosmetic and is a much-valued addition to a Russian lady's toilet necessaries.

To ascertain the value of the egg yolk, its specific gravity may be tested. The result of repeated experiments gives it an average of 1.025. To determine the percentage of fatty matter in the yolk, which is all that is needed for practical purposes, a sample should be heated to 212° F., and when dry exhausted with ether. The residue after the evaporation of the latter, is the total of oily matter in the yolk.

Egg oil is semi-fluid, and commences to solidify at 46° to 50° F. The yolk is used as a medium for rendering resins and oils diffusible in water, and from it is obtained, when roasted, the substance called "oil of eggs."

EMU OIL.—The grease of the emu (*Dromaius Novæ-Hollandiæ*) is held in high estimation by both colonists and natives in Australia as a cure in bruises and rheumatism. The skin of the bird produces about six or seven quarts of a clear, beautiful bright yellow, inodorous oil, which is used medicinally. The method of obtaining the oil is to pluck the feathers, then cut the skin in pieces and boil it. It is supposed that this bird, being deprived of wings, is endowed with a larger quantity of oil, to give the muscles freer play and enable it to move along with necessary facility.

FULMAR OIL.—In the same way as we employ bees to collect the honey of flowers, which they store up for their own use and for that of their young, so the inhabitants of the Island of St. Kilda (lat. 57.50 N., and long. 8.35 W.) employ certain sea-fowls (petrels, gulls, etc.) to collect cod-liver oil, which these birds obtain from dead and floating fishes as food for their offspring. The enterprising natives catch the bird, and, dipping its bill into a small leather bag, which they carry with them, compel it to disgorge the oil. A great trade is carried on there in this sea-bird oil. Enough is obtained in this way to make it an article of export.

It differs only slightly from other cod-liver oil, the chief difference being that it is purer, as the bird, by its instinct probably, only appropriates the best portions, while man does not thus select but presses out the whole oleaginous contents of the fish. The specific gravity of the oil is midway between cod-liver and sperm:

Fulmar	0.902
Cod-liver, light	0.924
Cod-liver, brown	0.929
Sperm	0.875

GOOSE-GREASE.—In four or five weeks after fattening geese, for their liver, in France, the body of the bird is so laden with fat that, when roasted, from three to five pounds of fat are said to be melted therefrom.

GUNCHARO OIL.—What are specially known as "oil birds" are the *Stratornis caripensis*, which are met with in dark caverns in parts of South America, and the islands of Guadaloupe and Trinidad. Humboldt gives an interesting description of the slaughter of them in one of the large caverns of the Guncharo Mountains, in the Government of Cumana, about 10' 10, whence the bird takes its popular name. This cave is peopled by millions of the birds. Once a year, near midsummer, this cavern is entered by the Indians, armed with long poles, who ransack the nests for the young birds, which are opened as they fall down. The peritoneum is found loaded with fat, and a layer of the same substance reaches from the abdomen to the vent, forming a kind of cushion between the bird's legs. (Humboldt remarks that this quantity of fat in frugivorous animals, not exposed to light, and exerting but little muscular motion, brings to mind what has long been observed in the fattening of poultry and oxen. It is well known, he adds, how favorable darkness and repose are to this process.) The fat thus obtained is melted in clay pots over a brushwood fire. It is half liquid, transparent, inodorous, resembling olive oil, and so pure that it will keep above a year without turning rancid. It is used for culinary purposes and for food, but I am not aware that it has been employed medicinally.

MUTTON-BIRD OIL.—This is a name given to some species of puffin inhabiting Tasmania and New Zealand. Several of the small islands of Bass's Straits abound with myriads of these sea-fowl. The most numerous of these are of the species called "Sooty Petrel." From the great length of their wings, they cannot rise from the surface of their breeding-grounds, but walk from them down to the sea; and in the proper season are trapped by thousands, in trenches cut across their path, into which they fall and are taken. More than 100,000 birds are slaughtered annually for the oil they yield—the feathers and flesh being also valuable. The body is pressed, and the oil runs from the mouth, each bird yielding about half a gill. The oil is reputed to possess considerable virtue as a liniment in cases of rheumatism. The fat when clean is pure white, and looks like goose-grease, but the taste is rather oily; however, it can be used for a good many purposes other than food.

OSTRICH FAT (*Struthis camellus*).—In Africa this grease has much local repute. The first care of the sportsman, after securing his bird, is to remove the skin, so as to preserve the feathers uninjured; the next is to melt down the fat, and pour it into bags formed of the skin of the thigh and leg, strongly tied at the lower end. The grease of an ostrich in good condition fills both its legs, and, as it brings three times the price of common butter, it is considered no despicable part of the game. It is not only eaten with bread, and used in the preparation of *kooskoosoo* and other articles of food, but the Arabs reckon it a valuable remedy in various maladies. In rheumatic attacks, for instance, they rub it on the part affected, till it penetrates thoroughly; then lay the patient in the burning sand, with his head carefully protected; a profuse perspiration comes on, and the cure is complete. In bilious disorders the grease is slightly warmed, mixed with salt, and administered as a potion. It acts thus as a powerful aperient, and causes great emaciation for the time; but, according to the Arabs, the patient, having thus been relieved of all the bad humors in his body, afterwards acquires robust health, and his sight becomes singularly good.

The fat of the American ostrich (*Rhea americana*) is also in similar repute, but the feathers (called "vulture feathers" in commerce) are more appreciated than the oil—animal oils being so plentiful where the ostrich is found. The grease from the breast and back is secured in bags formed of the skin, when a bird is shot.

A large quantity of oil is obtained in the Falkland Islands by boiling down penguins, a sea-fowl which derives its common name from its pinguidity, or fatness. The chief use of the oil, however, is for dressing leather.

REPTILE OILS.

A few reptiles furnish oils which have a commercial value, but they are used up chiefly locally, and are scarcely trade articles.

ALLIGATOR OIL.—The American alligator is largely slaughtered now for its hide, to be made into fancy leather. The oil extracted from this reptile has a high reputation among the swampers in America as a remedy for rheumatism, being given inwardly, and used outwardly as an embrocation. The tail of an alligator of twelve feet in length, in boiling, furnishes from sixty to eighty pints of excellent oil. Alligators are killed in great numbers in the river Amazon and other parts of Brazil, for the fat or adipose tissue, which is rendered into oil. When the reptile is killed, it is cut open; and the fat, which accumulates in considerable quantities about the intestines, is removed, and made up into packets in the skins of the smaller animals, taken off for the purpose.

The oil of the Indian crocodile (*Gavialis Gangeticus*) contains a larger proportion of solid fat than either neat's-foot oil or any fish oil. It solidifies at 33° F., while the others only thicken.

An oil is extracted, in Brazil, from the adipose tissue of a reptile called the *Sucurigu*. It is liquid, of a yellowish color, and used for rheumatism.

TURTLE OIL.—An oil is obtained from the loggerhead turtle (*Chelone caouanna*,) which is used in the preparation of leather and in perfumery. The Gigantic turtle is famous for the quantity of valuable oil which it yields. Oil is obtained from two species of turtle very abundant in the river Oronoco. The fat of the edible turtle, exposed to the sun, is converted into oil. Fresh, it is good for frying and other culinary purposes; and when it becomes rancid, as it is very fluid and penetrating, it serves to oil leather, to burn, and to lubricate machinery. It is not rare to obtain 100 pounds of oil from a single turtle. Oil is obtained in the Pacific Islands, and largely in Brazil, from the fat and eggs of various species of tortoises, by means of fermentation and decoction. It is of a yellowish color, opaque when well prepared; clear and liquid when purified, with a peculiar flavor. It is much used for culinary purposes by the lower classes in Para, and has the reputation of being useful in rheumatic complaints. There is an enormous trade carried on by the Indians about the Orinoco, Amazon and Madura Rivers, of Brazil, in preparing this *Mantega*, or turtle-egg oil. About 10,000 jars (holding each three gallons) are made annually; 6,000 are sent to Para, and the rest used locally. They employ it instead of butter. The eggs of the river tortoises are less oily than the round eggs of the sea turtle. A company has been recently formed to utilize the turtle of the Aldabra Islands, near the Seychelles. They propose preserving and canning the turtle oil for shipment to Europe, where its excellent medicinal properties, which are far in advance of cod-liver oil, would probably be much appreciated.

INSECT OILS.

A few oils are obtained from insects, but are rather curiosities than articles of commerce.

From the joints of the legs of the oil beetle (*Meloe proscarabeus*) a deep-yellow oil exudes, which is used in rheumatic complaints.

Locusts contain an oil which has been named caloptine, and a large percentage of pure formic acid. During a recent visit to Algeria, M. Raphael Dubois, of Paris, succeeded in obtaining a certain quantity of oil from the eggs of locusts. He is experimenting with a view of discovering if this oil can be employed in industry or therapeutics.

An oil or grease is obtained by boiling white ants (*Termites*) in water, and skimming off the oil which floats on the surface. This is used for food in Africa.

In France, cockchafers have been collected and utilized to yield an oil. They are placed in a boiler, heated to 100° or 120° for a quarter of an hour, and then placed in sacks and submitted to a strong press, when the oil exudes. This oil burns well, saponifies easily with potash, and with a small quantity of tallow forms an excellent lubricant grease.

A green medicinal oil, obtained from earth-worms (*Lumbricus*), is used in Europe as a remedy for toothache. In the old pharmacopœias this oil was said to help pains of the nerves and joints. In China a decoction of earth-worms is used for gonorrhœa.

THE PUNGENCY OF SODA-WATER.

BY THOMAS WARWICK.

The little boy who, on taking his first glass of soda-water, declared that it tasted "like his foot was asleep," must have struck a well-charged beverage. Had he been given instead a tumbler of soda-water similar to samples I have had served out to me, he would most probably have altered his verdict, and declared that the soda tasted like warm dish-water.

Yet there is no secret in securing a pungent water; it merely requires some care and a knowledge of the general principles which govern the absorption of carbonic acid by water. In spite of this fact, there are few druggists who can give sufficient time to looking into the subject, and even when they do they are apt to overlook the most essential points. Many a time have I been asked for some infallible rule for making pungent soda-water, by parties who complained they could not produce a beverage as well charged as that of their competitors. Some inquirers seemed to think that there was a special powder to be added to the beverage to secure this result, whilst others were under the impression that to cool the water before charging it was all that was necessary for obtaining good results.

As there are probably a large number of dispensers who have experienced this difficulty at one time or another, I think the following advice will be useful to many.

To begin with, I may state that the pungency of a beverage depends: 1. Upon the pressure at which the portable fountain is charged. 2. Upon the amount of atmospheric air present in the fountain. 3. Upon the temperature of the water. 4. Upon the amount of water in the fountain. 5. Upon the degree of agitation. 6. Upon the amount of gas that leaks out of the fountain. 7. Upon the temperature to which the fountain is exposed before being emptied. 8. Upon the amount of gas that escapes from the beverage when dispensed.

Taking up these points in order, I would say, first, that the influence of the pressure at which the soda-water is charged plays a most important rôle in the pungency, for the amount of gas absorbed by the water is directly proportional to the pressure; that is to say, when the pressure is double, the amount of gas absorbed will be double, and when the pressure is three or four times as great there will be three or four times as much gas absorbed, and the pungency of the soda-water will be three or four times what it was originally. While this law does not hold absolutely for all pressures, it is sufficiently close for all practical purposes, and it is therefore safe to say that, other conditions being the same, a water charged at 200 pounds pressure will be twice as pungent as one charged at 100 pounds pressure, and four times as pungent as one charged at 50 pounds pressure—or at least this would be the case if the escape of gas in dispensing were not greater from the more highly charged beverage.

Consequently, under ordinary circumstances, the higher the pressure at which the beverage is charged, the more pungent it will be when it reaches the customer's lips. Time and again have I heard it objected that above a certain pressure, say 150 pounds to the square inch, the escape of gas would be so great that, no matter how highly the beverage were charged at the start, it would be no more pungent if drawn at 200 pounds pressure than if at 150 pounds; in fact, some people claim that the pressure would be less in the former case than in the latter through the agitation caused by the escaping gas.

This reasoning seems plausible, but the following simple test will, I think, convince any druggist of the truth of my assertion. Let him take three portable fountains, charge one to 150 pounds pressure, another to 180 pounds pressure, and a third to 200 pounds pressure. Let him then draw a tumbler of plain soda from each, and, if I am not very much mistaken, he can readily perceive by the taste alone the difference between the samples, the more highly charged ones being the more pungent. Let him then draw another tumblerful of each, and leave the three standing on his counter so that the gas may slowly escape, and let him watch the bubbles as they rise. He will be surprised to find how much longer the soda-water charged at 200 pounds pressure will remain pungent than that at 180 pounds, and how much longer this will retain its gas than that charged at 150 pounds.

I am not claiming here—and I wish this distinctly understood—that dispensers should charge their soda-water to 200 pounds pressure, or even to 180. The danger of accident at such high pressure is greatly increased, and the wear and tear and strain on the machinery is so much greater in every respect that I do not recommend anything over 150 pounds to 160 pounds pressure for a regular working average, although I know of first class houses who charge to 180 pounds pressure as their regular standard. What I wish to say is simply that the pungency secured is greater at 200 pounds than at 180.

As to the second point, the influence of atmospheric air upon the pungency of the beverage: This acts principally by falsifying the indications of the pressure gauge. Thus, if air and carbonic acid are both present together at a pressure of 150 pounds, the amount of carbonic acid gas absorbed will be only proportional to the amount of pressure which the carbonic acid gas exerts by itself. I expect in a future article to consider this point more fully, as well as the third, the influence of the temperature upon the pungency of the beverage. Suffice it to say here, that the higher the temperature the less will be the pungency of the water, the difference of a few degrees making an astonishing difference in the amount of gas absorbed.

As to the fourth point, I would say that the amount of gas space in a fountain plays an important part in determining the pungency of the water. Many dispensers made it a practice to put twelve gallons of water in an ordinary ten-gallon fountain, and they are surprised to find that their soda-water is not so pungent as that of their competitors, who only charge ten gallons in the same size of fountain. The reason is that, as the fountain has only a total capacity of fifteen gallons, there is but a space of three gallons left for gas, instead of five. This deficiency can, however, be compensated for, within certain limits, by making the agitation more thorough, that is to say, by admitting gas more frequently from the generator, and by continuing the rocking longer, in order that the total amount of gas admitted and absorbed by the water may ultimately be the same.

This point very properly brings us to the next one, namely, the influence of the degree of agitation in securing a pungent beverage. And I may state at the outset that agitation does not in itself cause water to absorb gas. There is a certain amount of gas which the water would absorb in time if left to itself, and agitation merely hastens the process, although after a certain degree of saturation is reached the agitation acts in an entirely opposite manner and causes the water to give up a certain amount of the gas it has already absorbed. This is a most important point to bear in mind, for it follows that, while the druggist should spare neither time nor elbow-grease in thoroughly agitating the fountains when first charged, he should afterwards, whenever possible, let them stand for a few hours in a cool place that the process of absorption may continue. It also follows that when he finally does send them out, while he may with impunity add a little more gas to bring them to the desired pressure (although if properly charged in the first place this would be unnecessary), yet he should under no circumstances agitate them again, for by doing so he only expels the gas from the water and brings the beverage back to the same condition that it was in when first charged.

As to the sixth point—the amount of gas that escapes from the fountain through leakage—this is also of some importance, for as the gas escapes, the pressure in the fountain diminishes, and a certain amount of gas then escapes from the water, thus diminishing the pungency of the beverage. Such leakage usually occurs through the fountain-cock, although if the lining chances to be injured the leak may very well occur between the fountain-cock and the outer shell of the fountain. In the first case the trouble is usually due to one of three great causes: 1. The washer that forms the joint is imperfect or improperly placed, in which case a new washer will remedy the trouble. 2. The fountain-cock is not screwed down tightly enough (which is very likely to be the case in those fountains where only a metal packing is used to make the joint). 3. The joint will be found to have become irregular, or badly worn. This last cause is apt to happen if the operator belongs to that class of men who believe in brute force as a remedy for every evil. I have known dispensers who made it a practice to use a mallet and a wrench to screw down their fountain-cocks, and it is not surprising if, under this *régime*, the joint becomes rapidly worn and afterwards begins to leak.

A leak of gas, however caused, should be carefully guarded against, not only because it diminishes the pungency of the water, but also because, if the leak be sufficiently great, there may not remain enough pressure to discharge all the soda-water from the fountain. I will state right here, however, that, no matter what the dispenser does, the last soda-water in the fountain can never be so pungent as that first drawn, because as fast as a portion of the liquid is dispensed the pressure of the remainder become less, and a portion of the gas held in solution escapes, so that, unless a considerable excess of pressure is used at the start, the last gallon or two of soda-water in a fountain will be flat and insipid when drawn. It has always seemed strange to me that manufacturers have not tried to remedy this evil. The desired result could be easily obtained, and without much expense, by using fountains with two cocks, and having attached to one of these cocks a supply of carbonic acid gas under a greater pressure than that of the soda-water. An automatic pressure-regulator between the reservoir and the fountain would keep the supply of gas at any desired pressure, so that as fast as soda-water were drawn off from the fountain new gas would be admitted from the reservoir, keeping the pressure always at the same point in the fountain, so that the last liquid dispensed would be as pungent as the first. A reservoir of liquefied carbonic acid would answer admirably for this purpose.

As to the seventh point—namely, the temperature to which the fountain is exposed before it is emptied—this is one which is also frequently overlooked. Many people imagine that if they charge their water under the proper temperature it matters nothing what the conditions become afterwards, and they will carelessly expose the fountain to heat, thus allowing the gas to escape from solution and diminishing the pungency of the water to a considerable extent.

The eighth point is also a most important one, for, no matter what the pressure at which the beverage is originally charged, no matter how low its temperature, no matter how well agitated and how free from atmospheric air it may be, no matter how tight the joints of the portable fountain, the beverage may yet be dispensed in such a way as to become flat and insipid by the time it reaches the tumbler. There are two great causes which contribute to this end: the first is heat, and the second is agitation. Anything which in the dispensing apparatus tends to increase the heat of the beverage, or any obstruction which tends to agitate it in its passage, will favor the escape of the gas that is held in solution, and will correspondingly diminish the pungency of the water. Hence the importance of having good coolers in the apparatus. The best soda-water, if lukewarm when drawn, will be flat and tasteless, while a poorly charged soda-water drawn through a first-class cooler will, on the contrary, absorb some of the free gas that is always present, and so produce a really palatable beverage. To secure a cold soda-water, however, the dispenser must be liberal in the use of ice, he must be particular to break it into small pieces before inserting it into the ice-chamber, and he must moreover take the trouble at intervals during the day to push the ice well down upon the coolers, so as to keep the two in constant contact.—As to the second point mentioned, namely, the agitation of the beverage while passing through the marble apparatus, this plays a greater rôle in the pungency of the soda-water than one would be apt to believe. The water in its passage through the pipes, of course, becomes heated by friction, but the amount of this increase of temperature is, to the best of my knowledge, inappreciable, and hence need not be considered here. What is important, however, is that this friction acts mechanically, by the agitation of the particles of water, to free a certain amount of gas. All sharp bends in the pipe or coolers, all obstructions, in fact all changes in the width of the passage, especially changes from a small passage to a larger one where the beverage has a chance to expand and so lose some of its gas—all these tend to diminish the pungency of the beverage when drawn. This agitation of the beverage, however caused, in the pipe, has a double action, for it not only diminishes the pungency as explained, but it also increases "sputtering." In fact, the sputtering is but a natural result of the lack of pungency, for it is this very gas that has escaped from solution that gives rise to the familiar and much-dreaded sputtering.

In summing up this article I would say that the dispenser who wishes to secure a thoroughly charged beverage, one that shall be as pungent as the arts of man can possibly make it, must strictly observe the following points:

1. He must not allow any atmospheric air to find its way into the portable fountain.

2. He must charge the beverage to as high a pressure as is compatible with absolute safety.

3. He should, whenever possible, let his charged

fountains stand for twenty-four hours in a cool place, and agitate them as little as possible afterwards. (N.B.—The cooler the place, the better.) In cases where he has not time to follow the plan mentioned, he must make up for it by cooling his water before charging, and then agitating as thoroughly as possible.

4. He should see to it that there are no leaks in the fountain.

5. He should never expose a charged fountain to heat, but if for any reason it has been so exposed he should let it stand for a day or so in a cool place before drawing off the soda-water.

6. He should have the pipes and passages in his dispensing apparatus as free from bends or obstructions, and as uniform in size, as possible.

7. He should have the outlet of the draught-arm as wide as possible, so that the agitation in discharging will be reduced to a minimum, as a great loss of gas occurs here. There is, in fact, an astonishing difference in the pungency of the soda-water drawn from the large stream of the draught-arm, and that drawn from the fine stream.

THERAPEUTIC NOTES OF INTEREST TO PHARMACISTS.

BY DR. H. M. WHELPLEY, PH. G.

Pain in the stomach caused by indigestion is baffled by Dr. Hare with teaspoonful doses every thirty minutes of the following extract:

Tincture of capsicum	2 fluidrachms.
Tincture of Cannabis Indica	4 fluidrachms.
Deodorized tincture of opium	1 fluidounce.
Spirit of chloroform	1 fluidounce.
Spirit of lavender.......to make	4 fluidounces.

Drunkenness has not been entirely cured by the Keeley method. Dr. Gerhard prefers to give the patient a teaspoonful of the following mixture in a cupful of hot water or tea three or four times a day:

Tincture of capsicum	1 fluidounce.
Tincture of ginger	1 fluidounce.
Ammoniated tincture of valerian	1 fluidounce.
Compound tincture of gentian	2 fluidounces.

Boiled milk for children was not very popular a few years ago. At the present time most physicians prescribe it. It is not on account of boiled milk being more readily digested, but because heating the milk destroys any disease germs that may be in it.

Benzol is an expectorant, as well as useful liquid in microscopical work. Dr. Mundel, in the *Medical Record*, gives 10 drops of the following solution on sugar every three or four hours when an expectorant and sedative is required:

C. p. benzol	12 fluidrachms.
Oil of peppermint	30 minims.
Olive oil	2 fluidounces.

Baths for children are the subject of frequent discussion. They should never be given when the child is exposed to drafts of air. The change of temperature after the bath should be gradual, and it is not advisable to allow the child to remain long in the water.

Ear-ache is relieved on general principles by Dr. Dunn, who drops the following mixture into the ear several times a day:

Menthol	20 grains.
Camphor	20 grains.
Liquid vaselin	1 fluidounce.

While this may be useful occasionally, ear troubles are often serious affairs and demand medical attendance.

Diarrhœa, green apples, and their companions are making an appearance. Prof. Hare says that a good all-around remedy for these evils is the following:

Dilute sulphuric acid	1 fluidrachm.
Fluid ext. of logwood	1 fluidounce.
Paregoric	4 fluidrachms.
Syrup of ginger.........to make	4 fluidounces.

Acne—or pimples on the face, as they are frequently called—is a disease which outlives all remedies. Among the serviceable applications is the following ointment, which should be applied twice daily after washing the parts with hot water:

Iodide of sulphur	10 grains.
Lanolin	1 ounce.

Ergotin is a legitimate remedy for hypodermatic use. Druggists when called upon to prepare it in this form can make the following solution, which is used in Paris:

	Parts.
Ergotin	100
Distilled water	5
Phenol crystals	1

Hair is readily removed by spreading the surface with the following paste and allowing it to remain ten minutes:

	Parts.
Fresh sulphide of barium	50
Starch	25
Oxide of zinc	25
Water sufficient to make a paste.	

The remedy should be carefully used in order to avoid causing a sore.

The compound acetanilid pill being prescribed occasionally, has the following composition:

Acetanilid	1 grain.
Bisulphate of quinine	1 grain.
Hydrochloride of cocaine	$\frac{1}{16}$ grain.

The danger of rubber taken in the mouth is dwelt upon by a French journal. Experiments show that rubber toys, etc., that float in water and are elastic and soft are also harmless. Other rubber toys contain lead, zinc, and various other poisonous compounds.

Scabies, like other similar skin diseases, requires sulphur for rational treatment. The *Medical and Surgical Reporter* recommends the following ointment:

Carbonate of sodium	12 drachms.
Sublimated sulphur	3 ounces.
Tragacanth	15 grains.
Glycerin	6 ounces.

There should be brilliant friction of the surface with ordinary toilet soap before the ointment is applied. The disease is caused by small animal parasites which may lodge in the underclothing; so the articles of wearing apparel should be changed when the treatment is commenced.

Tincture of iron for burns is a new application of this old remedy. Good authority states that it should be applied at the earliest possible moment after the occurrence, a feather or soft brush being used to spread the liquid. If the skin is destroyed, dilute the tincture with water. It is claimed that the application relieves pain as well as hastens healing.

Cold baths in typhoid fever have reduced the death rate at least 5 per cent., if we are to credit Dr. Juhel-Renoy. We are convinced that the treatment is rational and should be encouraged.

Kidney diseases treated with kidneys, is the latest fad. A solution of the cortex is administered. We do not advise anyone to adopt this irrational treatment.

The cough in measles is one of the troublesome complications following that disease. Dr. Widerhofer prescribes this mixture, which is to be given in teaspoonful doses every two hours:

	Parts.
Extract of hyoscyamus	15
Water	7000
Syrup	1000

Wild cherry is a popular as well as a professional cough-remedy. A good mixture for general use is the following, a dose of which is a teaspoonful as required:

Tincture of blood-root	2 fluidrachms.
Tincture of lobelia	2 fluidrachms.
Syrup of senega	4 fluidrachms.
Sulphate of morphine	½ grain.
Syrup	2 ounces.
Infusion of wild cherry..to make	8 fluidounces.

Glycerin as a dressing for the umbilical cord has the endorsement of those physicians who have tried it, besides being superior to lard. We would suggest that it be mixed with one-third its bulk of distilled water.

The hives of children is often more difficult to treat than in grown-up people. A French physician recommends the following to be applied locally:

Chloral hydrate	1 drachm.
Powdered camphor	1 drachm.
Powdered gum arabic	1 drachm.

Mix the above until they become liquid, and then incorporate with 1 drachm of simple cerate.

Hiccough has been studied by a correspondent of *La Revue Générale de Clinique*, who says that in case the trouble is provoked by the sense of hunger it can be relieved by swallowing bits of bread. When gas from the stomach and intestines is the cause, take 15 to 30 drops of the tincture of nux vomica.

Red gloves are becoming fashionable, and some thoughtful chemist finds in them deadly coloring-matter. Further investigation shows that the manufacturers suffer with a skin disease and are treated with zinc ointment and a 2-per-cent. solution of boric acid.

Epilepsy.—Among the thousand and one other remedies now abounding is ⅛- to ½-grain doses of chloride of barium administered every four hours.

CHEMISTRY.

LETTERS FROM DORPAT.

BY PROFESSOR RUDOLPH KOBERT.

No. 2.

Acidum cathartinicum.—"Brown hygroscopic scales, readily dissolved in water and dilute alcohol, and consisting of a combination of the acid glucoside of the senna leaves with calcium and magnesium. The preparation leaves behind 20 to 25 per cent. ash, and *is in reality only a purified extract* which contains the active constituents of the senna leaves. The pure cathartic acid decomposes with extreme readiness. Therefore, *all the attempts made by me to produce the pure substance have thus far remained without success.* It is, indeed, possible to obtain a preparation approximately free from ash, but such product, even when exercising the utmost caution and avoiding all the more active reagents, is virtually inert. For this reason I no longer manufacture the Acidum cathartinicum previously quoted in my price list."

This avowal of the firm of Merck is honest and frank enough. Despite the dicta of Stockmann, there was accordingly still lacking a practical process for the production of the active principle of the senna, and this preëminently difficult task has been achieved where so much had been previously done for the senna—in Dorpat, which the scientific world will ever call Dorpat, it is to be hoped, despite the adoption of a new cognomen. A diligent pupil of Dragendorff's, *Alexander Jensz*, resumed the study and manipulation of the senna in 1891, and has just published the results in his inaugural dissertation.* His process is as follows:

Two kilos of Alexandria senna leaves are treated with a sufficient quantity of boiling water, permitted to stand twenty-four hours, expressed, and the extract evaporated *in vacuo*. The extract is then mixed with an equal volume of strong alcohol (95°), thoroughly shaken for a while, and permitted to stand for a day that precipitation may go on. The liquid is poured off; the precipitate is well shaken up with a small quantity of strong alcohol, and expressed. The combined alcoholic liquids, after filtration, are mixed with neutral acetate of lead until no more precipitate is formed.

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* Ueber die Cathartinsäure der Senna. Dorpat, 1893.

Next follows the filtering off and washing of the precipitate obtained. We must emphasize the importance of the latter operation; it is best performed as follows: Each time, after the washing water has run off, the precipitate is taken from the filter and thoroughly kneaded with water in a proper vessel. This is to be repeated (about four to five times) so long as the water passing off continues to show color.

The half-dried precipitate is stirred up with considerable alcohol of 90 to 95°, until it assumes the appearance of a liquid mass or pap, and is completely decomposed in an appropriate flask with H_2S gas.

By the introduction of atmospheric air or of CO_2 the excess of H_2S is removed; the solution then—whilst using a return-flow condenser—warmed for a half-hour on the vapor bath; filter, and again extract the PbS with alcohol of 85 to 90° under gentle heat; the combined filtrates are now mixed with ether until a bright yellow precipitate is no longer formed, being then put aside for a day to deposit.

The ethereal fluid is then poured off; the reddish-brown mass adhering to the walls of the vessel rinsed off with ether or strong alcohol, dissolved in a minimum quantity of 30-per-cent. alcohol, and the solution evaporated in a flat vessel at a temperature not exceeding 50° C. When the substance is perfectly dry, it may be removed from the bottom of the vessel in the form of long, thin, beautiful brown and transparent strips, and may be reduced to powder.

The preparation is even at this stage adapted to medicinal uses.

For further purification it is again dissolved in strong alcohol under the employment of heat, precipitated with considerable ether, and treated as above. The yield from two kilos of senna leaves amounts usually to from 12 to 15 grammes, and is in the form of a yellowish-brown powder. The cathartic acid thus obtained is an amorphous glucoside.

On combustion in a platinum vessel, the substance swells up in a very characteristic manner, and is consumed while giving forth a sooty flame and leaving behind a coal which is burned with difficulty. After the complete combustion of the latter, no ash remains.

The substance is soluble with difficulty in cold water, more readily in hot water. Strong alcohol takes up none of it in the cold; in hot alcohol, on the other hand, it is soluble. It dissolves most readily, developing a coffee-brown tint, in weak 30- to 40-per-cent. alcohol and in water on the addition of alkalies, of which latter but a very little is required. Ether, benzin, chloroform, petroleum ether, glacial acetic acid, etc., take up none of the substance. Its aqueous and alcoholic solutions yield a very feeble acid reaction; on the addition of carbonate of sodium, no escape of CO_2 is to be observed. It is of a colloidal nature. It is very imperfectly re-precipitated from its solutions in alkaline water, by mineral acids. Tartaric acid; oxalic acid, acetic acid, and citric acid produce slight turbidity. Solutions of acetate and subacetate of lead, of silver nitrate, and of cupric sulphate yield abundant brownish precipitates; iron salts produce a greenish-black coloration, in analogy with the reaction of a number of tannic acids. The substance contains nitrogen; Fehling's solution undergoes quick and marked reduction when subjected to its action.

Inasmuch as the substance exhibited no modifications of any character at 100°, it was dried to constant weight at this temperature and employed in elementary analyses.

For the determination of the carbon and hydrogen, combustion was executed with cupric oxide, and silver spirals in a strong current of oxygen.

Analysis yielded:

Substance in Grammes.	CO_2 in Grammes.	H_2O in Grammes.	Per cent. of C.	Per cent. of H
0.340	0.692	0.167	55.502	5.456
0.311	0.632	0.150	55.160	5.358
0.206	0.419	0.104	55.466	5.485

Average = 55.376 per cent. C; 5.433 per cent. H.

The nitrogen was determined according to Kjeldahl's method, as also according to the Will-Varrentrapp method modified by Arnold.* $\frac{1}{10}$ normal sulphuric acid was applied, then titrating back with $\frac{1}{10}$ normal caustic soda. Indicator: Phenolphthalein.

The determination according to Kjeldahl yielded:

I. 0.438 gramme substance consumed 3.3 c. c. $\frac{1}{10}$ normal-sulphuric acid = 0.01 gramme or 2.2 per cent. N.

II. 0.207 gramme substance consumed 1.5 c. c. $\frac{1}{10}$ normal-sulphuric acid = 0.004 gramme or 2.1 per cent. N.

III. 0.389 gramme substance consumed 2.9 c. c. $\frac{1}{10}$ normal-sulphuric acid = 0.008 gramme or 2.0 per cent. N.

Average, 2.1 per cent. N.

The determination of the N according to Will-Varrentrapp and Arnold, after deduction of the corrections,† yielded an average 0.6 per cent. higher. The number for N obtained by the first method serves very well for the formula.

From the results of the elementary analysis, we calculate the formula: $C_{30}H_{36}NO_{15}$.

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* *Bericht der Deutsch. Chem. Gesellsch.*, Bd. xviii, p. 806; Fresenius' *Zeitschr. f. Analyt. Chem.*, Bd. xxiv, p. 451.

† See Arnold's modification of Will and Varrentrapp's method for the combustion of nitrogenous compounds, *Journal of Chemical Society*, p. 837, vol. xlviii, London, 1885.—Trans.

	Found:	*Formula demands:*
C	55.37 per cent.	55.38 per cent.
H	5.43 "	5 53 "
N	2.10 "	2.10 "
O	37.10 "	37.02 "

On prolonged boiling of the substance with dilute HCl or H_2SO_4, the characteristic senna odor is developed, under formation of sugar, and a black earthy product separates out, which, after washing, still reduces in a pronounced manner alkaline copper solution. On treating the cathartic acid with alkalies and oxidizing agents, a number of colored products seem to be developed; after treatment with HNO_3 a yellow body could be withdrawn from the mixture with ether, which we could obtain after the evaporation of the ether in crystalline but not in pure form. It seems to be a body similar to chrysophanic acid, for with potash it yielded the purple-red color reaction characteristic of this group of substances.

The cathartic acid produced by Jensz was tested by me on animals, as well as by various authors on human beings in health and disease, with a view to determining its medicinal and toxic properties.

It was first established that a dose of 0.1 gramme to (at the most) 0.15 gramme, when administered to normal human beings in health, asserted a pronounced purgative action in every instance within three to seven hours. In the stage of augmented peristaltic action, colic-like abdominal pains may supervene. The urine never contains a trace of the substance or of its decomposition products.

In patients, some of whom suffered from quite stubborn constipation, abundant thin stools resulted in almost every case from 0.15 gramme within four to seven hours; 0.10 gramme was sufficient with children. Not many of the patients complained of pains. Blood was never observed in the stool. Unpleasant collateral symptoms, such as vomiting, nausea, collapse, never supervened.

The experiments instituted by me on animals were made with frogs, cats, dogs, and rabbits. Frogs were able to endure doses as high as 25 and even 50 milligrammes, subcutaneously injected, without revealing any morbid symptoms.

Cathartic acid, administered internally to warm-blooded animals, exerts a much feebler action than upon man, so that at least 0.3 gramme is required to produce diarrhœa in a dog weighing 12 kilogrammes. The same dose is necessary with cats and rabbits to produce marked purgation. Injected into the blood, the same dose is borne without causing the supervention of any morbid symptoms whatever.

From these experiments it may be concluded that the cathartic acid of Jensz is a very safe but at the same time very reliable purgative for human use, costing little money, admitting of very convenient administration in the form of a single pill, and certainly surpassing many other cathartics in utility; it will accordingly supersede the latter in the markets of the world. The firm of Ferrein (of Moscow) has undertaken the production of the preparation on a large scale.

Dorpat, April 18, 1893.

HYDRASTIS CANADENSIS.*

BY F. A. THOMPSON.

Golden Seal, introduced to the medical profession about forty years ago by the Eclectics, has become one of the leading drugs of the materia medica. For its complete botanical, medical, and pharmaceutical history, consult "Drugs and Medicines of North America." It is my intention in this paper, not to discuss the various constituents of this drug as to their characteristic reactions, or make a special study of them, but to present briefly the results obtained in assaying the drug, ground ready for manufacture of galenical preparations, and several fluid extracts, made by the leading manufacturing pharmacists.

Golden Seal contains three alkaloids, namely: Berberine, $C_{20}H_{17}NO_4$; hydrastine, $C_{21}H_{21}NO_6$; and canadine, $C_{21}H_{21}NO_4$; the latter having been in dispute for some time, and its presence but recently established by F. Wilhelm and E. Schmidt. Canadine is present, however, in but small quantities, and therefore may be ignored in the estimation of berberine and hydrastine. The most important constituent of this drug is its *hydrastine*, based on the medical reports, and it is this on which we are to judge of the quality of the drug or any preparation made from it.

Assay of the Drug.

Ten grammes of the drug in a moderately fine powder is exhausted with strong alcohol by hot re-percolation, requiring two or three hours, percolate cooled and diluted to 100 c.c. with same menstruum; 25 c.c. of this tincture is placed in a suitable flask; 1.3 c. c. HCl U. S. P., 0.2 c. c. H_2SO_4, and 12.5 c. c. concentrated ether, are added; and the mixture allowed to stand twenty-four hours in a cool place, with frequent shaking. At the end of this time, transfer the crystals to counter-poised filter-papers, washing them with a mixture of equal volume of concentrated ether and strong alcohol until filtrate gives no acid reaction. Dry crystals at 105° C., weigh, and multiply weight by 0.9017 to obtain the amount of berberine alkaloid, and then multiply that result by 40 to ascertain the percentage.

The filtrate from berberine estimation is rendered nearly neutral, evaporated to a small volume, solution cooled and transferred to a separator; and the residue remaining in evaporating-dish is thoroughly washed with slightly acidulated water till free from alkaloid, the washings added to the separator. Render the fluid alkaline with solution of ammonia, and extract the alkaloid with several portions of chloroform, evaporating the chloroformic solution to dryness at a low heat and protected from light. Re-dissolve in acid water, transfer to 2-oz. prescription vial and wash with ether, rejecting the same. Re-precipitate alkaloid with ammonia water, and extract with several portions of ether. Evaporate the ethereal solutions in a shallow crystallizing-dish. Now dissolve the residue in 10 c. c. $\frac{N}{20}$ H_2SO_4 (a small amount of ether facilitates the solution of the alkaloids); add 20 or 30 c. c. water, 2 drops of cochineal tincture 1:10, and determine the free acid by titration with $\frac{N}{100}$ sodium hydrate solution. Each c. c. of $\frac{N}{100}$ H_2SO_4 neutralized by the alkaloid represents 0.00383 gramme hydrastine, and the amount multiplied by 40 equals the percentage in the drug.

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*Read before the Michigan State Pharmaceutical Association, June, 1893, at St. Clair Flats, Mich.

In all my results here, I have worked duplicate assays, and have also tried several duplicate assays for the hydrastine by the following modification, which has given equal results, and which, being much shorter, I feel confident will prove the better method of the two. It is as follows:

After neutralizing filtrate in berberine estimation, and reducing to a small volume, it is mixed with 8 or 10 grammes of sawdust (previously treated with acid water and alcohol to remove extractive matter), the mixture dried, placed in a suitable 4-oz. flask or bottle, and 100 c. c. of modified Prollius mixture* added. After macerating several hours, with frequent shaking, 50 c. c. of the clear ethereal fluid is transferred to a beaker, evaporated to dryness at a low temperature, redissolved in acid water and ether, and transferred to a 2-oz prescription vial, and from this step on treated the same as in the other process.

Examination of Ground Drug.

Number.	Per cent. Berberine calculated from dried (105° C.) berberine muriate.	Hydrastine by weight.	Hydrastine by titration with N-100 H_2SO_4.
No. 1......	3.3	2.	1.76
No. 2......	4.15	2.8	2.50
No. 3......	3.13	2.52	2.3
No. 4......	3.24	2.32	2.1
No. 5......	3.48	2.7	2.5
No. 6......	3.89	2.48	2.25
No. 7......	4.06	2.8	2.5
No. 8......	3.0	2.3	2.18
No. 9......	3.1	2.3	2.16
Average..	3.48	2.47	2.27

The above results are much higher in berberine and hydrastine than any recorded. Lloyd reports in "Drugs and Medicines of North America" a practical manufacturing yield of 1.8 per cent. monosulphate of berberine, equivalent to 1.39 per cent. berberine alkaloid, and hydrastine crystals from 0.25 to 1 per cent. A yield of 3 to 3 5 berberine muriate can be readily obtained on a practical scale, also a much larger amount of hydrastine, having obtained 3.6 grammes of beautiful white crystals from 200 grammes of drug, or 1.8 per cent.

FLUID EXTRACT GOLDEN SEAL U. S. P. AND WITHOUT ALCOHOL.

Assay.—10 c.c. of either preparation is placed in a 100-c.c graduated flask; about 75 c.c. of alcohol is added, and the mixture digested on a water bath for twenty or thirty minutes. After cooling, sufficient alcohol is added to dilute to 100 c.c. This alcoholic solution is then treated the same as the tincture obtained in the assay of the drug.

Examination of Fluid Extract Golden Seal, U. S. P.

Number.	Per cent. Berberine calculated from dried (105° C.) berberine muriate.	Hydrastine by weight.	Hydrastine by titration with N-100 H_2SO_4.
No. 1......	2.13	2.2	1.96
No. 2......	2.7		2.5
No 3......	1.88	1.36	1.22
No. 4......	2.52	1.98	1.87
No. 5......	2.52		2.45
No. 6......	1.73	1.3	1.16
No. 7......	1.89	1.74	1.62
Average..	2.19	1.71	1.82

The above fluids represent the leading manufactures. Van Ledden Hulsebosch, Amsterdam (*Pharm. Weekblad*, March 21, 1891), reports a yield of 3.43, 2.34, and 3.63 of berberine, and 2.14 and 1.71 per cent. hydrastine (by weight), in three different lots of fluid extract of his own make, and 1.86 and 2.71 per cent. berberine and 1.46 and 1.74 per cent. hydrastine in two samples made by other pharmacists. L. van Itallie, Amsterdam (*Pharm. Weekblad*, April 4, 1891), found in various fluid extracts of hydrastis, 2.21, 2.52, 1.42, and 1.79 per cent. hydrastine, by weight. The above results on hydrastine by weight would necessarily be higher than those obtained by titration with volumetric acid solution, due to some impurity present in the alkaloid. A standard fluid extract should contain not less than 2 per cent. hydrastine, based on titration with volumetric acid.

Fluid Extract Golden Seal without Alcohol.

Number.	Per cent. Berberine calculated from dried (105° C.) muriate.	Per cent. Hydrastine by titration with volumetric acid.
No. 1......	1.46	1.3
No. 2......	2.	1.3
No. 3.....	0.65	0.61
No. 4......	0.66	0.46
No. 5.... .	0.12	0.72
No. 6......	0.54	0.69

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*Ether..........................	250 c.c.
Chloroform......	100 c.c.
Alcohol..............................	25 c.c.
Conc. ammonia...........	10 c.c.

This preparation is used much more extensively than the pharmacopœial extract, and therefore should be much richer in hydrastine than shown in the above results, which show up the quality of the preparation as made by five different leading manufacturers, the first two being of one make.

Analytical Laboratory of Parke, Davis & Co.,
Detroit, June 16, 1893.

PEPSINS.*

BY L. A. HARDING, B.SC., PH.D.

Pepsins are now manufactured to meet any desired demand as to their power of digestion. I have before me a circular from Parke, Davis & Co., who list in it as many as ten qualities of pepsin ranging in their digestive power from 1000 to 15,000. It may not be amiss to state here that a pure pepsin, whether in scale or powder, should be perfectly soluble in water, showing the absence of mucus, etc. It should be perfectly permanent, unaffected by the atmospheric influence; non-hygroscopic, showing the absence of peptone; it should be perfectly odorless, and the scales should be bright and clear, and the powder perfectly white.

The following is a list of samples submitted to me, and their digestive power upon albumin simply verified according to the manufacturers' claim. Twenty-four samples were examined, and nearly all came up to the claim of digestion, but many left much to wish for in relation to color and permanency. Four samples were donated.

Four samples from Mr. Charles Heller, of St. Paul, were as follows:

No. 1. Golden Scale, New York & Chicago Chemical Co.: Scale having a decided odor, and dissolved only about 1000 grains of albumin.

No. 2. Parke, Davis & Co. (manufacturers' claim, 1:4000): Almost odorless, soluble, and digested somewhat more than claimed.

No. 3. Armour & Co. (manufacturers): Granular, bad odor, and would not digest 1:2000 as claimed.

No. 4. Fairchild Brothers & Foster (manufacturers), New York, claim 1:2500: Bad odor; dissolve not more than 2000.

Allen Bros., of Minneapolis, furnished five samples:

No. 1. German Scale: Odorless, very soluble, digested nearly 1500 grains of albumin.

No. 2. Fairchild Brothers & Foster, New York: Yellow, odorless, dissolved 800 grains of albumin.

No. 3. Cudahy (manufacturer), Scale: Hygroscopic, dissolved only 1200 grains of albumin.

No. 4. Golden Scale: Very hygroscopic, dissolved 700 grains.

No. 5. Lehn & Fink, Saccharated: Dissolved 50 grains.

Ray Humiston, of Worthington, furnished two samples:

No. 1. Cudahy (manufacturer), Scale: Hygroscopic, bad odor, and dissolved about 1200 grains.

No. 2. Philadelphia Chemical Co.'s Saccharated: Dissolved 60 grains.

J. P. Allen, of St. Paul, furnished seven samples:

No. 1. Philadelphia Pepsin Co.'s: Hygroscopic; dissolved 1000 grains.

No. 2. Golden Scale: Hygroscopic, dissolved only 600 grains.

No. 3. Fairchild Brothers & Foster, Powdered: Not soluble; dissolved 750 grains of albumin.

No. 4. Fairchild Brothers & Foster, Scale: Hygroscopic, dissolved somewhat more than its predecessor, namely, 900 grains.

No. 5. Carl Jensen, Crystal Pepsin; claim 700 to 1000: Very hygroscopic, dissolved scarcely 700 grains.

No. 6. Scheffer's Saccharated; claim 500: Dissolved 50 grains.

No. 7. Bondault's Powdered: Dissolved 1250 grains.

Messrs. Melendy & Lyman, of Minneapolis, donated two samples, as follows:

No. 1. Armour & Co. (manufacturers); claim 2500: Very hygroscopic, and dissolved only 1800 grains.

No. 2. Fairchild Brothers & Foster (manufacturers); claim 2500 powdered: Dissolved only a little more than half its claim, namely, 1350.

It will be seen from the above that there is a great diversity of activity, which in fact, however, can scarcely be taken as a criterion, only perhaps the hygroscopic samples, which show a decided impurity of peptone.

Fergus Falls, Minn.

ON SYRUP OF CALCIUM LACTOPHOSPHATE.

BY H. W. AUFMWASSER.

Although the literature of this subject is an extensive one, and although a number of modifications of the official formula have been proposed, the difficulty still remains that the preparation is an unstable one, precipitates of a variety of forms appearing sooner or later, containing calcium always and either lactic or phosphoric acid.

The purpose of this work is to determine the precise character of these precipitates, and with a knowledge of their composition to adopt means for preventing their formation.

These precipitates are in two characteristic forms—masses or clusters of minute crystals of cauliflower form, and granular crystalline powder.

At times the syrup, remaining transparent, solidifies, presumably due to precipitation of *tri*-calcium-phosphate. Such a specimen not being obtainable since this inquiry was begun, nothing can be said about the composition of the precipitate.

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* Read before the Minnesota State Pharmaceutical Association, at Lake Minnetonka, June 14, 1893.

When the syrup is prepared by the useful alternative formula (Rother's), employing two molecules of phosphoric acid and three of calcium carbonate, the second precipitate will usually form, if not at once, almost invariably upon the addition and solution of sugar.

In a specimen of such a precipitate, calcium was estimated as oxalate, weighing as carbonate, phosphoric acid as ammonium-phosphomolybdate, weighing as magnesium pyrophosphate, and water by difference.

Gm. 1.159 ppt. gave .8375 $CaCO_3$ = 40.56 per cent. CaO.
Gm. .410 ppt. gave .3215 $Mg_2P_2O_7$ = 51.54 per cent. P_2O_5.
By difference .... 7.90 per cent. H_2O.

These percentage figures indicate two molecules calcium oxide and one molecule each phosphoric acid and water. $2CaO,P_2O_5,H_2O$ or $CaHPO_4$, mono-hydrogen-calcium phosphate.

The first form was found in a specimen of the syrup made according to the official method, and had deposited slowly during two or more years.

It was soluble in water, slowly in the cold, very easily and abundantly in heat, gave reactions for calcium and for lactic acid, was neutral in reaction and therefore was calcium lactate. Its appearance is due to the fact that out of the material ordered by that formula can be formed more calcium lactate than the quantity of water can hold in solution, the proportion being 1 part of calcium lactate in 7 parts of water, while the limit of permanent solubility is 1 part of the salt in 9½ parts of water.

The formation of this precipitate cannot be prevented apparently, but it may be redissolved again by warming the syrup, the solution being permanent for a long time.

The formation of the second precipitate is due to the decomposition of a small part of the tetra-hydrogen-calcium-phosphate into mono-hydrogen-calcium-phosphate and free phosphoric acid, the presence of the latter producing a state of stable equilibrium. The more dilute the solution, the greater must be the relative proportion of free acid to keep up this stable condition. The remedy is therefore the addition of phosphoric acid to the prepared solution before dissolving therein the sugar. This solution is preferably made by using calcium carbonate and phosphoric acid instead of calcium phosphate. It must contain the calcium as tetra-hydrogen-calcium-phosphate, the decomposition of which is then prevented by added phosphoric acid.

In practice, if the free acid is one-fourth of that used in obtaining the tetra hydrogen salt, the soluble calcium salt $CaH_4 2PO_4$ will not suffer decomposition. It will not do to have a solution of tri-calcium-, or of tetra hydrogen-calcium-phosphate in presence of lactic acid alone, as in each case mono-hydrogen-calcium-phosphate will form. The presence of free phosphoric acid is necessary.

The following formula has been found to yield a permanent syrup:

	Parts.
Calcium carbonate..................	21.3
Phosphoric acid, 50-per-cent	109.4
Lactic acid..........................	33
Orange-flower water................	80
Sugar	600
Distilled water, a sufficient quantity to make	1000

Dissolve the carbonate of calcium in the acids diluted with the orange-flower water, and with 150 parts of water filter the solution and wash filter with water to obtain 400 parts. In this dissolve the sugar, if necessary with little heat.

Inasmuch as the "commercial soluble lactophosphate of calcium" has been proposed as a starting-point for this syrup, a good readily-soluble specimen was examined.

Estimation in duplicate gave:

CaO	14.7 per cent.
P_2O_5.....................	2.4 per cent.
Lactic acid............ ...	77.28 per cent.
Water by difference...	5.62 per cent.
	100.00 per cent.

Calculating the P_2O_5 to tri-calcium phosphate, and remainder of calcium to calcium lactate, it contains one molecule $Ca_3 2PO_4$ to 28 molecules calcium lactate. As the proportion of the official formula furnishes 7 molecules $Ca_3 2PO_4$ to 28 of lactic acid, the use of the commercial soluble salt is not permissible.

Covington, Ky.

DARKENING OF SYRUP CONTAINING FERRI PHOSPHAS, U. S. P., DUE TO PARTIAL REDUCTION OF ITS FERRIC SALT TO FERROUS BY SUNLIGHT.

BY W. H. WEARN.

Supposing this darkening of syrups containing ferri phosphas, U. S. P., to be produced by the action of sunlight, I prepared a syrup containing two grains of ferri phosphas, U. S. P., to each fluidrachm, this being the maximum amount usually used in its preparation. A portion of the syrup was then bottled in one-ounce colored bottles of the following colors, viz., amber, blue, green, and white, and each of them placed under the direct action of the sun's rays.

The syrup contained in white bottle changed its color three different times during a period of nine hours, viz., amber, black, and chlorophyll green, the last named color being its permanent one, remaining so under the continued action of the sun's rays for weeks without change. From the sixth to the ninth hour, the time at which the green color is developed, a brisk evolution of oxygen gas takes place, usual tests for oxygen being used for its determination. The reserved portion of the syrup, which had not been exposed to the sunlight, was then tested for ferrous and ferric salts with ferro- and ferricyanide potassium, the characteristic blue color developing with both when added, showing both salts to be present. The exposed syrup, then being tested by the same reagents, responded to the test with ferricyanide potassium, but did not with the ferrocyanide potassium, showing the absence of the ferric salts which were present before exposure to sunlight. A solution was then prepared and treated by the same method with the same result.

This excludes any action that might be attributed to sugar as a cause, and demonstrates the fact that the change is due to sunlight.

In studying the U. S. P. formula and process for preparing ferri phosphas, I deduct this formula:

$$2Fe_2O_3C_{12}H_5O_{11}6HO+6Na_2HPO_412HO=Fe_3(PO_4)_2Fe_2(PO_4)_2\text{-}FeO+3Na_3C_6H_5O_7+Na_2HPO_4+NaHO+18CO=18H_2O.$$

The above formula shows ferri phosphas U. S. P. to contain ferrous and ferric phosphate, with ferrous oxide and other by-products.

From the above facts I conclude that the sunlight destroys the molecule of ferrous oxide, thereby liberating its oxygen, and renewing chemical affinity of ferric phosphate, enabling it to appropriate the free atom of air, which produces ferrous phosphate and eliminates ferric salts entirely, as shown by preceding tests.

The following formula explains the power of sunlight to eliminate or reduce to ferrous salts the ferric salts existing in ferri phosphas U. S. P., as per above formula:

$$Fe_3(PO_4)_2+Fe_2(PO_4)_2FeO+Sunlight=2Fe_3(PO_4)_2+O.$$

By these experiments it is shown that the darkening of syrups containing ferri phosphas U. S. P. is due to the unfinished action of sunlight in its reducing power.

Syrup in colored bottles remained unchanged under the direct action of the sun's rays for thirty-six hours, or four times as long as that in white bottle, after which the same change took place. Hence it is seen that colored glass will protect it a reasonable length of time, and that nine hours' exposure to sunlight will give a syrup permanent under all conditions, of a beautiful chlorophyll green color, free from ferric and richer in ferrous salts.

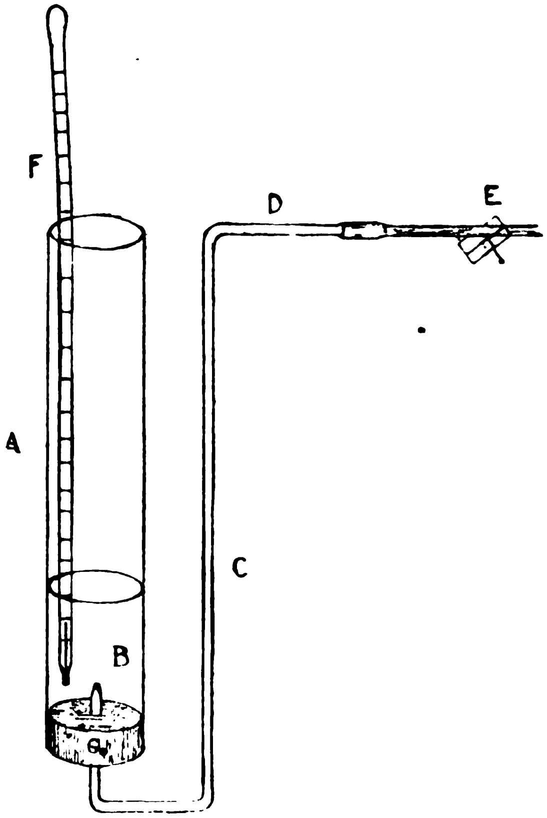
I would recommend that a concentrated solution of ferri phosphas be prepared and exposed to sunlight until green color is developed, and evolution of oxygen gas ceases, after which it may be made into syrup of desired strength.

Charlotte, N. C.

Flashing-Point.

Petroleum.—The "flashing-point" is a term applied to the temperature to which kerosene oil must be heated before it takes fire upon the application of a flame.

Among the many forms of apparatus that have been devised for the purpose of determining the flashing-point, the following recommends itself on account of its simplicity:



A is a glass cylinder about five inches long and three-fourths of an inch in diameter; C is a glass tube, drawn to a narrow orifice at B, just within the wooden or rubber stopper G, and connected at D, by means of a rubber tube, with a bellows.

A should be filled about one-third full of the oil to be tested, and held, by means of a clamp, in a water bath to the level of the oil. Air, controlled by a pinchcock E, so as to keep a slight foam on the surface of the oil, is now passed through D C B. Heat is applied to the water bath, and as the temperature of the oil rises from degree to degree, as shown by thermometer F, the test is made by bringing a small flame for an instant to the mouth of A.

When the flashing-point is reached, the vapor ignites and the bluish flame runs down to the surface of the oil.

The United States has no point fixed by law which kerosene oil must reach before taking fire. Each State, however, has its own legal point, which in many States is placed at 110° F.; in Michigan the legal point at present is 120°.

Cross-Checking Prescriptions.

Cocaine, in combination with some other drugs, was prescribed by a Western physician. Alarming symptoms developed in the patient soon after partaking of the medicine, and were diagnosed by the physician as the symptoms of atropine poisoning. Fortunately for the patient, the result was not serious, and upon recovery legal proceedings were instituted against the druggist who compounded the prescription. The druggist defended himself successfully by showing that, according to the system of checking in vogue in his store, it was impossible to make a mistake in dispensing.

The case is an unusually interesting one from the fact that, upon assay, atropine was actually found in the medicine, but the other ingredients of the prescription were found to be present also in the proper proportions, and the druggist accused the physician of putting atropine into the preparation to clear himself.

It is no doubt a fact that had the pharmacist had no system of checking poisons he would have been found guilty of the charge brought against him. The case serves as a warning to all druggists to adopt some method whereby each ingredient of a dangerous prescription shall be separately taken from its container, and weighed and cross-checked by a second person.

What system should be adopted, can best be determined by the druggist himself; but we would suggest that a rubber stamp something like the following be procured:

℞ Examined and dispensed by
Material examined and checked by

An impression could be made on the back of the prescription when received, and the signatures filled in by the dispensers.

Large manufacturing houses have elaborate systems of checking, in order to overcome any possibility of mistakes, and it is equally important that druggists should protect themselves and the community in a similar manner.

Perhaps some pharmacist who has a system in practical operation will favor us with his method. We should be glad to hear from any such.

Bismuth in Elixir.

R.O.Y.—An answer to a former inquiry fully covers the point, and we reprint it herewith:

"We are not prepared to say that soluble salts of bismuth possess therapeutic properties equal to those of the insoluble salts, but can cite as evidence bearing on the subject that the soluble ammoniated citrate of bismuth has been used for a sufficient length of time to prove by its continued and somewhat increasing demand that it possesses some positive medicinal value.

"This salt requires a neutral liquid for permanent solution, and bismuth elixirs or solutions should not be combined in a haphazard way in prescriptions, for the bismuth will usually be deposited soon after neutrality is disturbed by the addition of liquids or substances having an acid reaction.

"Exhaustive research has been made with the hope of discovering some salt of bismuth which could be held in permanent solution in the presence of free acids, but as yet nothing has been found to possess sufficient advantage over the soluble ammoniated citrate to supersede it in practical use.

"It is commonly believed that the bismuth is precipitated from such solutions by acids of the gastric juice soon after entering the stomach."

Ginger Wine.

B. & Co., Grand Rapids.—Of the many formulas for ginger wine published, the two following are representative ones and will yield a satisfactory preparation:

1. ℞	Sugar	24 lbs.
	Water	7 gals.
	Ginger, ground	8 ounces.

Boil the above together for half an hour; allow to cool to 75°, and add the rinds of 16 lemons and some good yeast; set aside for two weeks to ferment, then add 2 pints of brandy, and bottle for use.

2. ℞	Sugar	20 lbs.
	Water	7 gals.
	Ginger, ground	9 ounces.

Boil the sugar, water, and ginger for half an hour, skimming it well. When nearly cold, pour into a cask containing 9 lbs. raisins (chopped fine), 4 lemons (sliced and deprived of seeds), and 1 pint yeast. After standing uncorked for three weeks, bung the cask tightly or draw off into bottles.

For the manufacture of a ginger-wine essence the *Chemist and Druggist* offers the following formula:

Gingerin	℈j.
Capsicin	gr. vj.
Rectified spirit	ʒj.
Glycerin	℥iss.
Caramel	℥ij.
Tartaric acid	ʒij.
Syrup	℥iij.
Orange-flower water...to	℥x.

Put the capsicin and gingerin in a mortar, and triturate with the spirit; then stir in the glycerin, next the caramel and syrup. Dissolve the acid in the orange-flower water (previously brought to the boil), and finally add this solution to the mixture.

PARIS LETTER.

The Physiological Action of Glycerin—Soluble Creasote—Persistence of Bichloride of Mercury—Peccadilloes of Caffeine Citrate — Chloroform from Acetone and Salt —Gallanol—Fines and Imprisonment for Poor Pharmacy.

The Paris Conseil d' Hygiene was recently consulted by the Government concerning the propriety of permitting the sale of alimentary products containing from 20 to 40 per cent. of glycerin. M. Riche, of the Société de Pharmacie, was selected to investigate the matter. His report contains some points of interest. He said that in Germany concentrated glycerin is given in teaspoonful doses in quantities of 200 grammes daily, in trichinosis. Dryness of the throat and intense thirst was induced in some cases, but this was a local action due to the concentrated preparation, for diluted glycerin is recommended to allay thirst. Glycerin is laxative in doses of 15 to 30 grammes. It is absorbed rapidly in great quantity by the organs of digestion. It is not found in the blood, and only in minute quantities in the excretions except after doses exceeding 20 grammes. In small doses, glycerin augments assimilation and favors nutrition. Some writers say that it increases the formation of glycogen and the biliary secretion, but does not increase the amount of sugar excreted in diabetes. According to Catillon, to obtain favorable effects on nutrition, the doses should not exceed 30 grammes. Single doses of 40 to 60 grammes might cause renal or vesical irritation, but the quantity given may be much greater if fractionally administered. Introduced directly into the blood, glycerin gives rise to hæmoglobinuria. Given by the mouth to dogs in quantities of 8 to 15 grammes per kilo of weight, death is produced, and very severe renal leisons are found on autopsy. M. Riche said, in conclusion: "Taken in small doses, glycerin is not toxic; large doses may be mortal. I cannot say what would be the effect on a man who would continuously ingest fair quantities of a food containing glycerin in notable proportions, and it seems reasonable to decide that foods of this kind should not be offered for general consumption. Commercial glycerin, I may add, is necessarily impure and often contains very deleterious products."

In the *Répertoire de Pharmacie* for May, M. Carles states that, acceding to the requests of several pharmacists, he has been experimenting with a view to find a means for rendering creasote soluble in water. After many experiments he reached the following formula:

Creasote.........................	10 grammes.
Tinct. of Panama wood (quillaya).	80 grammes.
Aq. dest.........................	60 grammes.

Each tablespoonful contains 1 gramme of creasote. This dose is miscible in any given quantity of water; lukewarm water will give a slightly clearer solution. This preparation is not an emulsion, but a genuine solution. The solvent property of the tincture is evidently saponin and not alcohol. This mixture will keep for an indefinite time. It may be put into the keeping of patients, who can easily prepare from it the prescribed enemata. "Clinical experiments," says the author, "have demonstrated the eligibility, efficaciousness, and easy toleration of creasote administered in this soluble form."

In a study of the action of corrosive sublimate, in weak solutions, upon cotton dipped in the same, M. Vignon found that, after a contact of twenty days, only 22 to 28 per cent. of mercury, in the form of corrosive sublimate, remained in the fabric. On heating the cotton to a temperature of 60° F. the amount was found to be still further diminished. Under these circumstances the fabric, in various samples, was found to contain 12 to 22 per cent. of corrosive sublimate, 25 to 50 per cent. of oxide of mercury, and 38 to 53 per cent. of calomel. The author considered that the use of this degree of heat had the same chemical effect on the sublimate as age would have, and, within a certain time, all of the bichloride would be decomposed without the aid of heat.

M. Soucheyre, recognizing the tolerably well known fact that the "citrate of caffeine" of the Codex consists in reality of a mechanical mixture of equal parts of caffeine and pulverized tartaric acid (although it is sold, in France, at the price of pure caffeine), set to work to make a real caffeine citrate. He finally concluded to adopt a modification of Lloyd's process, as previously published in the *Répertoire de Pharmacie.* His method is as follows: Dissolve 1.80 grammes of caffeine in 30 cubic centimeters of pure chloroform; dissolve 1.80 grammes of tartaric acid in 15 cubic centimeters of alcohol; mix the two solutions, and evaporate in a water bath. The product is citrate of caffeine in the form of a white crystalline powder. This powder is insoluble in chloroform, but dissolves readily in a mixture of two parts of chloroform and one part of alcohol. It is soluble in water, but, curiously enough, if the water be evaporated the residue does not consist of the real citrate of caffeine, but only of the acid and the caffeine in mechanical mixture. So M. Soucheyre concludes that real citrate of caffeine cannot exist in an aqueous solution.

According to the *Revue Scientifique*, chloroform may easily be prepared from acetone and chloride of sodium by the use of electrolysis. The apparatus consists of a double-bottomed still which may be heated by steam. A 5-per-cent. solution of salt is introduced, and the liquid is brought to the boiling-point. The acetone is then introduced through a tube, and at the same time a continuous current of electricity is passed through the liquid. Two plaques of lead serve as electrodes. The chloroform gradually forms and passes over, through a worm, to the condenser. After the apparatus has been operated for about two hours, the heat is shut off and the contents of the still examined. Two layers of liquids are found; the upper one consists of water and acetone —which is used for dissolving the salt for a further run; and the lower layer consists of chloroform, free from chlorides and otherwise pure.

The gallol of commerce is an impure anilide of gallic acid, which is sometimes called gallanilide. MM. Cazeneuve and Rollet have obtained this body in a pure state, for medicinal use, and have named it gallanol. It is prepared by heating tannic acid with an excess of anilin, and treating the mass with water acidulated with hydrochloric acid. Several crystallizations in alcohol are required before gallanol appears in its pure state under the form of lamellæ. This substance is not toxic, and it determines no inflammatory action. It was given to dogs in doses of 4 grammes with no unpleasant result. Gallanol adheres to the cutaneous surface whether used pure or mixed with talcum. It is said to have given excellent results in several forms of eczema and psoriasis. It is odorless and does not injure linen. It may be employed as an ointment or in alcoholic solutions.

The pharmaceutical society of Bordeaux, known as La Chambre Syndicale des Pharmaciens de la Gironde, recently instituted summary proceedings against a pharmacist of that locality who was "dishonoring his profession." The culprit was shown to have dispensed medicaments which were badly prepared, which were not composed in accordance with the requirements of the Codex, and which were made up of drugs of inferior quality. He was condemned to undergo a month's imprisonment, to pay a fine of $10, and to pay a smaller fine for the current expenses of the pharmaceutical court which convicted him. In France, no one so relentlessly condemns a bad pharmacist as his respectable brethren who have the honor of pharmacy at heart.

LONDON LETTER.

The Pharmacopœial Report—Proposed Official Tincture-Menstrua—Cascara Sagrada and Pomegranate Bark—Indian Opium in Medicine—Woody Ipecacuanha—The Vinegar Question—Coal Tar Disinfectants, are They Poisonous?—Sore Throats and Street Sanitation.

The customary annual report presented by Professor Attfield to the Pharmacopœia Committee of the General Medical Council is always looked forward to as a skillful condensation of work done and suggestions made in the preceding year. To those interested in the progress of pharmacy the current treatise will be especially valuable on account of the number of important questions so ably treated therein. In fact, so many radical alterations of and additions to the official guide in the English practice of pharmacy are recommended, that it does not appear improbable that another "addendum" may precede the publication of the next British Pharmacopœia—which is to "worthily inaugurate the twentieth century." The recommendations also show an increased recognition of the variety of wants in an empire of such vast extent, and that the representatives of the different colonies and dependencies are becoming more alive to the necessity of by some means securing local requirements a place in the "one uniform standard and guide."

It is, however, of course only possible to refer to subjects of more general interest here, such as the proposed extension of the official tests for chloroform, a very good *résumé* of recent work in this direction being given. The laborious and painstaking researches of Farr and Wright on the questions of Tincture menstrua and processes have deservedly obtained copious reference; but Professor Attfield, however, fails to agree as to the necessity for four spirits, but suggests one standard spirit for the Pharmacopœia, and would have in each tincture formula the quantity of 90 per-cent. spirit and of water stated which is requisite to form a menstruum of the exact strength found by experiment to best secure the most complete exhaustion of the drug.

In reference to the preparation of extracts of Cascara Sagrada, attention is called to the necessity of selecting suitable material for operation, and the desirability of using bark from young trees that has been kept at least one year, if Moss's experiments are confirmed. On the strength of De Vrij's experiments with Pomegranate-root bark, drug importers are advised to endeavor to obtain a supply of the carefully dried bark from the white-flowered pomegranate, and pharmacists are appealed to for the elaboration of a satisfactory method for the standardization of the extract. In view of the contradictory opinions as to the value of Podophyllum Emodi as an additional source of resin, its adoption is still held in abeyance; neither is any practical recommendation made for the better definition or testing of Eucalyptus Oil, Professor Attfield being unaccountably not yet convinced as to the superior medicinal value of eucalyptol over phellandrene and the other terpenes associated with it in the oil.

Much attention is also given to clearly defining the legal position in regard to the sale of "soda" and "potash" waters, and to demonstrating how hopelessly at variance are the demands of the public, the requirements of medical practitioners, and the practice of manufacturers. Knowing from experience the difficulty of weaning the public from the popular fallacy of calling a beverage "soda" water which contains no, or at least only traces of, sodium salt, the official reporter adheres to his recommendation to drop the official synonym.

One other subject referred to that is causing great discussion in the London drug trade at the present time is the probable introduction of Indian Opium into medicine in place of the Turkish product. Although the native drug is used exclusively in the army, hospitals, and dispensaries of India, it is commonly supposed to possess only about one-half the morphine strength of Turkey opium, so that its use is criticised as evidence of a state of affairs in India not creditable to the medicine and chemistry of the present day. In spite of this, and perhaps supported by the fact that, notwithstanding the extensive use of the opium in India, medical men fail to recognize any physiological difference in its effects, and that a sample of Patna opium recently sent over was found to contain 8.55 per cent. morphine and to yield an excellent tincture, the Indian drug promises to acquire a hold upon the London market.

A trial shipment of 20 cases Patna opium, the precursor of 500 or 600 cases, each containing forty 4-lb. balls, awaiting shipment if omens are favorable, appeared in the sale-rooms last week, and considerably disturbed the calculations of the "bulls," who, anticipating a rise in the already advanced prices, were not at all pleased at the prospect revealed. The opium was declared to test 6.3 per cent. morphine, was very moist, and wrapped in leaves and stalks constituting 6 to 7 per cent. of its weight. Whether the low percentage of morphine in Indian opium is due to want of care in collection or to a natural deficiency in the juice, remains to be ascertained; but the observation of Flückiger that narcotine, which is much less easily decomposed than morphine, is found in East Indian opium in abnormal proportion to morphine, at least indicates a probable destruction of morphine in the manufacturing process. At any rate the prospects of the drug would undoubtedly be improved if the Indian Government should see fit to introduce improvements in its mode of manufacture as advocated by Holmes and others.

The quality of another drug has also exercised persons interested in the drug trade of late. Much complaint has been heard from buyers as to the large amount of woody matter in the Ipecacuanha lately imported, and attention has also been called to the insufficiency of the old methods of valuation to judge of the variation in quality. The climax was reached when an analytical report was appended to a sample of exceptionally woody ipecacuanha in the market, stating that it contained 2.4 per cent. emetine and was therefore a "really good root, well over the average," a percentage of 2.1 to 2.2 per cent. emetine being considered the average yield by the analyst. Further, it was stated on the same authority that the woody stalks of ipecacuanha are worth 80 per cent. of the value of the true root in emetine. These figures were criticised and challenged in no measured terms, and the upshot of the whole affair has been that the Drug Club have asked Prof. Attfield to make an examination and draw up a report on the matter. There is no doubt that the methods of analysis generally adopted are imperfect, either failing to extract the whole of the emetine or extracting it in an impure condition, so that it is important that a definite basis for the valuation of this important drug should be secured. The average yield of emetine has generally hitherto been regarded as about 1.6 per cent., whilst Hooper, the Indian quinologist, gives 1.79 per cent. for the root, 1.13 per cent. for the stem, and 1.45 per cent. for the leaves.

A question of still wider bearing than the above has lately been ventilated in the law courts and in the various scientific and trade journals. "What is vinegar?" has been the query in every one's mouth for the past few weeks. Undoubtedly acetic acid is the principal constituent, and for many purposes a dilute solution of the pure acid would supply its place. The natural product "prepared from a mixture of malted and unmalted grain by acetous fermentation," according to the British Pharmacopœia, also contains a number of aromatic bodies, coloring-matters, and the like, which considerably add to its value as a condiment; but to limit its preparation to this source, at any rate as a food, as recently ruled by magisterial decision, is absurd. In many quarters "wine" vinegar is preferred, yet one authority gave evidence that this is not vinegar; and in some parts of the country "cider" vinegar is drank, whilst even an artificial vinegar, colored and flavored to taste, as long as it is prepared from pure acid, does not appear to present any objection from a sanitary point of view. The use of impure pyroligneous acid is of course to be condemned, as well as grosser adulterants like sulphuric and other mineral acids, and here the food inspector is within his proper sphere of action; but however stringently the pharmacopœial directions may be read, they should not be made to apply to an article of common consumption.

Though Carbolic Acid affords almost daily instances of poisoning, it is rarely that a death is recorded from the use or misuse of any of the coal-tar disinfectants freed from carbolic acid. A new preparation that has been very much advertised in this country during the past month has met with this misfortune at the outset of its career. The case was one of a typhoid patient who in delirium first attempted to cut his throat and then drank some ounces of the disinfectant in question. There was considerable disagreement between the local medical evidence and the professional evidence brought forward by the manufacturers to prove the non-poisonous character of their preparation, and the inquest was in consequence several times adjourned, but eventually the jury decided that death was due to typhoid fever accelerated by throat-wounds and by the overdose of disinfectant fluid.

The continued and almost unparalleled spell of hot weather in this country has given rise to a slight scare as to the possible contagion-breeding properties of the wood pavement in the larger towns. Attention has been called to a general disorder prevalent—a form of tonsillitis attended in some cases with suppuration, in others with the marks of true diphtheria. Speculation has been rife as to its cause, and some critics have condemned unreservedly wood-pavements as unsanitary. The accusation is so far an unproved suggestion, and there is no evidence showing that ulcerated throats have been more prevalent amongst those who live near and daily traverse this kind of pavement than amongst those who do not; but probably the agitation of the question will be a good thing for the manufacturer of cheap disinfectants.

It would be impossible to conclude this letter without reference to the welcome presence in London of Dr. Rusby, whose original contributions to the BULLETIN OF PHARMACY have always been followed with great interest here and secured him no mean reputation.

BERLIN LETTER.

Animal Extracts as Therapeutic Agents—Current Pharmaceutical Questions—Wool-Fat and Water—The Preparation of Piperazin—Genetic Relations of the Elements, their Rôle in Modern Pharmacy.

The increase of therapeutic agents of the nature of tuberculin and other tuberculous remedies, in spite of the incredulity with which the idea is received in certain quarters and the fallacies into which many of their votaries have unwittingly dropped, indicates that there is something in the notion of animal extracts after all, and that it behooves every practitioner and individual interested in medicine to calmly consider recent developments in this direction. Attention is at once directed to the comparative length of time that it took to introduce animal vaccine, and the rapidity with which the Brown-Séquard testicular fluid, the diphtheritic "heilserum," and similar preparations, have found a hearing and a more or less favorable reception.

Recent observations by physiologists have demonstrated that the functions of many organs are more varied than was formerly supposed. The experiments of Bradford on the kidney have shown that this organ performs other duties than merely excreting urine, and the researches of Minkowski and v. Mering on pancreatic diabetes, of Langlois and Abelous on the suprarenal capsules, and of Horsley and others on the thyroid, have led to the belief in "internal secretions," which exercise an undefined action upon the blood and through it upon the metabolic changes of the tissues. In no case has the composition of these internal secretions been definitely settled, but undoubtedly the matter extracted from the fresh organ by glycerin, salt solutions and other solvents consists of a heterogenous mixture containing a small quantity of active substance, probably of complex organic nature, manufactured by the organism. It is therefore not surprising that some amount of temporary stimulant effect is produced when these substances are administered to a debilitated person unable to make them for himself, and in the case of myxœdema at least the results have justified the theory.

Thyroid extract is quite in vogue throughout Europe, though according to report it has found most extensive application in England, usually so conservative as to new remedies; and it is no doubt true that success in this instance has stimulated manufacturing chemists to the preparation of extracts of nearly every organ in the body, even including cancroid and that of the pituitary body as a cure for acromegaly.

A number of interesting debates have appeared in the pharmaceutical journals of this country, and, in conjunction with the reports of one or two important patent fights, have occupied the attention of their readers to the partial exclusion of original scientific communications. One of the most amusing if not absolutely instructive debates arose from an attack made by an analytical chemist upon a well known manufacturer of chemicals with respect to the tendency of wasting time and fogging the laity by meddling with and turning over old facts and processes without any prospect of successful issue, instead of devoting the same energy to striking out and establishing new ideas in the preparation of synthetical products. This led to a lengthy reply from the manufacturer in question, to the effect that the new preparations brought out from time to time by his firm, although not actually involving new principles, did apply the valuable knowledge gained as to the importance of the positions of different organic groups in the molecule of other medicaments in a new direction, and that the improved results obtained justified the introduction of the substances into the therapeutical world.

So far, however, this line of defense has only called down upon the devoted head of the unfortunate manufacturer a further stinging reproof from professional quarters, amply supporting the original charges, and complaining that many manufacturers not only unnecessarily trouble physicians with new remedies of inferior character, but also by not producing pure preparations hamper the march of modern progress in therapeutics.

Several law suits of interest have lately been decided in this country, giving in fact good illustrations of what the rights of a patentee are and what not. As long as lanolin has been brought before the notice of the medical profession, it has been continually attempted to try to upset the patentee's claim, which, of course, is only natural, as crude wool-fat is an article that can be obtained in abundance everywhere. In a recent suit the chief interest was centred around the question whether it is illegal to intimate or hint to a third person that he might employ any wool-fat if he mixes it with an aqueous solution of a salt, or with perfumed waters such as rosewater, etc. It was contended on the other hand by the defendants that lanolin is not formed if wool-fat is mixed with water containing some other substance, and thus, for instance, the making of a potassuim-iodide ointment with wool-fat and water is not an infringement of the lanolin patent. The court, however, decided that the addition of a third substance dissolved in water to the wool-fat does not alter the principle of the case, and that chemists will be fined if they, notwithstanding the decision, try to do so with another product than the wool fat of Liebreich.

A second case turned on the patent rights of piperazin, and demonstrates the power that the German Patent Office possesses in deciding for or against a patent application, and that the decision then involves the full penalties of the law for manufacturing the article under dispute. This course is different from that adopted in many countries, where the rights of the patent offices are not of such absolute and decisive nature, and do not practically replace a court of justice.

An original construction has been placed upon the modern development of pharmaceutical chemistry in relation to synthetical remedies, in a communication by Dr. Erdmann. Amongst other things, he points out that as a general principle the toxicity of a chemical element is approximately in inverse ratio to the frequency of its occurrence upon the earth's crust, and refers to the physiological activity of the elements compared with their position in the periodic system as already pointed out by Dr. Schiff. In conclusion he gives a very instructive tabular view of the most important new remedies, which cannot of course be reproduced here.

NEW YORK LETTER.

Unfortunately, there is no improvement in the wholesale drug market of this city to report. My letter of last month stated that the one marked feature of the wholesale drug trade was general depression. I can only say that the same remarks will apply to the period that has elapsed since that time to the present, only more emphatically. Our money market has not rallied as could have been expected, and loans are very difficult to get. For this reason a disposition to sell on the part of weak holders has been most marked, but in spite of such disposition very few transactions of any very great importance occur.

There are but few changes of importance to note, which will appear as follows:

Opium continues still to decline. The demand during the past month has been exceedingly limited. There has been no speculative interest shown whatever, and, in view of the fact that certain discouraging reports have reached us from Smyrna, a decline rather than an advance has taken place.

Morphia.—There has been no change.

Quinia.—Very little, it is understood, is coming upon the market from the manufacturers, but the very great supplies in second hands are constantly being urged upon the market. Prices have declined still another cent an ounce during the past month, and the market has again become very seriously weakened by the reports from the last bark sales in Amsterdam, prices having fallen off for the bark some 20 per cent.

Citric Acid.—Manufacturers have advanced their price one cent per pound, and are not in position to make any important deliveries. The demand, furthermore, has increased, and a further advance is looked for.

Insect Powder.—Active demand still continues for this important article, and, owing to the exceedingly high prices abroad for insect flowers, the price for powder has advanced from two to three cents per pound.

Celery seed has received considerable attention during the month, there having been large transactions in the article, concentrating the stock in very close hands.

Ergot.—Owing to advices of short crop abroad, this article is being held at present figures very firmly. The slightest unusual demand would materially enhance values.

Vanilla beans, in the main, have sustained well the price quoted last month, but there is a greater inclination on the part of holders to sell, and prices are, if anything, rather favoring buyers.

Ipecac has again rallied in price, and is from five to ten cents a pound higher than last month, with most favorable reports from the London market for higher prices still. The demand has been somewhat active—sufficiently so, at least, to check the downward course that was reported a month ago.

Golden Seal and Mandrake roots are being forced upon the market at unusually low prices. We do not discover that stocks are unusually large, but holders, being anxious to realize, are pressing sales, with the effect of reducing the market.

Orris root, which has for so long ruled at exceedingly low prices, has at last rallied, owing to small crops, as the result of drouths abroad. This root, of every variety, has advanced, and has a strong upward tendency at present.

Menthol.—Continued advices from Japan to the effect that the yield is small, have had a tendency to sustain menthol at its present very high price. The new crop is commencing to arrive. There is no prospect whatever of decline, but, to the contrary, when in the autumn the demand sets in, much higher prices will have to be paid.

New York City, July 13, 1893.

ATTENTION, DRUG TRADE.

To the Editor of the BULLETIN OF PHARMACY:

We are occasionally compelled to notice firms that endeavor to do business on the strength of our name and reputation; and recently attention has been called to a concern in Minneapolis, Minn., that, under the title of Northwestern Wine Company, offers to furnish liquors, ostensibly bearing the label of our and other manufacturing drug houses. We quote from the circular sent out by this firm as follows:

> "We enclose you the price current or salesman of our liquor specialties.
>
> "Any and all of the above can be so packed as to meet your individual requirements, in a plain box bearing the firm label of the most prominent supply houses, *i. e*, Parke, Davis & Co, McKesson & Robbins, etc."

On communicating with this Company, we received the information that the use of our name was "through the intervention of a clerical error," and that the clerk responsible for the same had been discharged.

We wish it distinctly understood that we have no connection in any way, shape, or manner, with any liquor or wine house, and that any such, placing the firm name of Parke, Davis & Co. upon their packages, do so altogether unauthorizedly.

While the explanation afforded by the Company might appear to be satisfactory, the paragraph in which our firm name appeared is, to say the least, *prima facie*, peculiar, since it declares that all the goods of this Company "can be so packed as to meet your individual requirements, in a plain box bearing the firm label of the most prominent supply houses, etc."

We feel obliged to make this announcement in self-defense, and, therefore, ask our friends who may be recipients of such circulars to kindly communicate the fact to us. We have no connection with the Northwestern Wine Company; and while we feel bound to, in a measure, accept their explanation, we cannot but feel there has been an ulterior motive, and to mercenary ends, manifested throughout the affair. We have taken such steps, however, as we believe will prevent the unauthorized use of our firm name upon their packages.

Yours very truly,

PARKE, DAVIS & CO.

Detroit, Mich., July 24, 1893.

CHICAGO LETTER.

The arrangements for entertaining the A. P. A. guests have been completed, and the druggists throughout the land will not regret coming to the Columbian meeting. The Chicago druggists will give the delegates a boat ride, a lunch at Fischer's Garden, a trip to the World's Fair, a reception, and a banquet. The Chicago Apothecaries Society has planned a banquet to the officers of the A. P. A. officers and other visitors during the International Convention week. In the mass meeting (?) called by the A. P. A. Arrangement Committee, which was made up of fourteen druggists and one viking-orator, this proposed banquet was termed "select"—and so it is intended to be. It will be no disastase meeting; the Chicago Apothecaries Society is made up of druggists exclusively, and run by druggists for druggists only, and it is an everlasting pity that the A. P. A. ever abandoned the old plan of keeping the Association in the same lines. If any association should be free of drummers and professional walking-delegates, it is the A. P. A. But alas! it is not; it was not thus to be.

The boss cutter of Chicago has died by request—of the Cook County sheriff, and it remains to be seen what pious member of the wholesale and manufacturing fraternity is doing penitence at the liability side of the wreck for claiming not to furnish goods to the cut-off concern. But as these honorable gentlemen will put up the self-defense racket, the Sub-committee must exonerate them. The editor president has claimed so many things that it will be hard to remember all the claims. At one time the capital at his command was $75,000; then his profits, at cut-rate even, were satisfactory; perhaps they were, but—not to the creditors, apparently. The Chicago druggist whom the president-editor bluffed into a bet—which was promptly taken up, but repudiated—thinks of handing in his claim to the assignee, unless his attorneys convince him that betting debts are barred out by the statute of limitation—as laid down in Hoyle's Revised Cut-Rate List, paragraph 15, on Fairbank's Essence of Pepsin.

Your correspondent has met with nineteen different and contradictory explanations of the bust-up, each of the nineteen philosophers claiming that the result was conclusive proof of the correctness of his theory. One thing alone remains uncontradicted: that the organized-association-campaign was and will be a failure. These matters are all governed by eternal rules of commerce, and not by "whereases." The cutter got all the goods he wanted, and the "cut-off" did not cut off. But truth and decency are always victorious. Saloon practice don't go with the pharmacy a bit better than hifalutin braggadocio with honest plain facts.

The Chicago druggists are naturally very much disappointed by the letter issued by Mr. Kline. His self-defense theory is the death-knell to all hopes from that direction. The Chicago retailers would have put up with another dose of resolutions and whereases, rather than with such a complete confession of inability to compete with the monster of cutting. What is the difference in theory between self-defense and self-preservation? Some twelve or fifteen years ago the biggest cutting department store made Brother Ebert an offer of $25,000 a year if he would accept the management of its drug department. Acting on motives of self-preservation, he would have accepted; and if he had, where would have been the drug trade to-day? Demoralized beyond resurrection.

PAN-AMERICAN MEDICAL CONGRESS—SECTION ON GYNÆCOLOGY AND ABDOMINAL SURGERY.

All members of the medical profession are cordially invited to attend the meetings of this section to be held in Washington, Sept. 5th, 6th, 7th, and 8th.

The sessions promise to be exceptionally interesting, many valuable papers having been contributed. Those who may wish to read papers before this section and who have not yet sent in their titles and skeleton abstracts are requested to do so at once.

Papers have already been contributed by the following distinguished gentlemen from the United States and Canada: Drs. T. Johnson Alloway, Montreal, Can.; A. W. Abbott, Minneapolis, Minn.; J. M. Baldy, Philadelphia, Pa.; H. J. Boldt, New York City; Augustus P. Clarke, Cambridge, Mass.; Ernest W. Cushing, Boston, Mass.; Andrew F. Currier, New York City; L. H. Dunning, Indianapolis, Ind.; Geo. R. Deane, Spartansburg, S.C.; W. E. B. Davis, Birmingham, Ala.; Joseph Eastman, Indianapolis, Ind.; Geo. M. Edebohls, New York City; De Saussure Ford, Augusta, Ga.; William Gardner, Montreal, Can.; T. H. Hawkins, Denver, Col.; John R. Haynes, Los Angeles, Cal.; Edw. W. Jenks, Detroit, Mich.; Jos. Taber Johnson, Washington, D.C.; Howard A. Kelly, Baltimore, Md.; Florian Krug, New York City; G. Betton Massey, Philadelphia, Pa.; Lewis S. McMurtry, Louisville, Ky.; R. B. Maury, Memphis, Tenn.; Wm. F. Myers, Ft. Wayne, Ind.; E. E. Montgomery, Philadelphia, Pa.; Robert T. Morris, New York City; Chas. P. Noble, Philadelphia, Pa.; Jos. Price, Philadelphia, Pa.; Geo. H. Rohé, Baltimore, Md.; Jas. F. W. Ross, Toronto, Can.; Chas. A. L. Reed, Cincinnati, O.; I. S. Stone, Washington, D.C.; R. Stansbury Sutton, Pittsburgh, Pa.; T. Algernon Temple, Toronto, Can.; A. Vander Veer, Albany, N.Y.; W. B. Ward, Tokeka, Kan.

BROOKS H. WELLS, W. W. POTTER,
English-speaking Secretary, Executive President.
71 West 45th St, New York City.

MEETING OF THE MISSOURI PHARMACEUTICAL ASSOCIATION.

The Missouri State Pharmaceutical Association held its fifteenth annual meeting at Excelsior Springs, June 13th to 16th. The crystal anniversary witnessed the largest attendance in the history of the Association, 323 members and visitors being present. Of this number, 179 were from Kansas City and about 75 from St. Louis.

Fifty-six new members were elected, which increases the list to 1,200.

President G. H. Chas. Klie, of St. Louis, delivered an able and characteristic address, touching on numerous topics of the times. Many delegates from other States were present; among them were James Reed, of Nebraska City, Neb.; Mrs. J. M. Crissey, Omaha, Neb.; A. V. Pease, Fairbury, Neb.; S. C. Wilson, Lincoln, Neb.; J. O. O'Reilly, Kansas City, Kan.; Mr. Hettinger, Wichita, Kan.; Dr. Lee Hatch, President of the Illinois State Pharmaceutical Association; Thos. Knoebel, East St. Louis, Ill.

Treasurer Gus. J. Meyer's report shows a balance of $109.56.

Major C. P. Walbridge, of St. Louis, addressed the organization and spent three days at the convention.

F. W. Sennewald, Secretary of the Missouri State Board of Pharmacy, stated that the Board was doing its utmost to enforce the law and give practical examinations. The Association unanimously recommended Mr. Sennewald to the Governor for reappointment to his position, the term of which expired in July.

The Committee on Legislation reported through A. Brandenberger, of Jefferson City, and recommended that another effort be made to amend the pharmacy law. The Association indorsed the suggestion.

The election of officers resulted as follows: President, William Mittelbach, Booneville; First Vice-President, A. Brandenberger, Jefferson City; Second Vice-President, W. M. Fedderman, Kansas City; Third Vice-President, Leroy Farmer, Lexington; Treasurer, E. G. Orear, Breckenridge; Secretary, Dr. H. M. Whelpley, 2342 Albion Place, St. Louis; Assistant Secretary, W. C. Waldeck, St. Louis; Local Secretary, C. L. Cravens, Excelsior Springs; Council—S. A. Howard, Kansas City; G. H. Chas. Klie, St. Louis; A. F. Fleischman, Sedalia; R. H. Sweeney, Ash Grove; A. T. Mosley, Harrisonville.

The Missouri State Pharmaceutical Travelers' Association, which is a branch of the M. S. P. A., elected the following officers: President, E. G. Orear, Breckenridge; First Vice-President, W. D. Hussung; Second Vice-President, Wm. Wakefield, Kansas City; Third Vice-President, F. E. Meadows, St. Joseph; Secretary and Treasurer, A. S. Forker, Sedalia.

The microscopical exhibition was one of the features of the convention.

The following deaths were reported: W. M. Striblen, Hugo Frielingsdorf, A. O. Smith, C. C. Ferris, J. H. Teenor.

The following papers were read and discussed: "Sensitive Iodine Preparations," by G. H. Chas. Klie, Ph.G., St. Louis; "The Relation of Specific Gravity to Atomic Weight," by A. N. Doerschuk, Kansas City; "Thirty-five Years a Druggist on the Missouri," by A. Breunert, Kansas City; "The Druggists' Catechism," by C. E. Corcoran, Kansas City; "A Good Pharmacist—A Better Physician," by J. C. Falk, Ph.G., M.D., St. Louis; "With Our Medical Friends," by William Mittelbach, Ph.G., Booneville; "Formulæ for Syrup Hypophosphite Compound," by Francis Henn, Ph.G., St. Louis; "Fifty Health Hints," by H. M. Whelpley, M.D., St. Louis; "Some Objectionable Prescriptions," by J. M. Good, Ph.G., St. Louis; "Historical Sketch of the Past Fifteen Years," by Fred. R. Dimmit, Kansas City; "Twenty

Minutes' Talk on How to Study," by Dr. H. M. Whelpley, St. Louis; "Notes on Hydrogen Dioxide," by Dr. Charles O. Curtman, St. Louis (illustrated with volumetric estimations).

The Association decided to offer prizes for papers and special exhibits at the next meeting. These will be announced by the Secretary at an early date.

President Mittelbach announces the following as chairmen of committees: Trade Interests, G. J. Meyer, St. Louis; Papers and Queries, J. C. Falk, St. Louis; Legislation, A. Brandenberger, Jefferson City; Pharmacopœia, Dr. C. O. Curtman, St. Louis; National Formulary, Prof. Francis Henn, St. Louis; Deceased Members, P. H. Franklin, Marshall; Drug Adulterations, Dr. C. C. Hamilton, Kansas City; Entertainment, F. W. Sihler, Kansas City; Membership, A. S. Forker, Sedalia; Attendance, W. P. Hucke, Kansas City; Microscopy, Dr. H. M. Whelpley, St. Louis; Transportation, G. H. J. Andreas, St. Louis.

The next meeting will be held at Excelsior Springs, June 12–15, 1894.

Although the scientific work was large and the discussions interesting, the entertainments were a prominent feature of the meeting. F. W. Sihler, of Kansas City, chairman of the Entertainment Committee, succeeded in getting up the most extensive and satisfactory programme ever presented.

H. M. WHELPLEY, *Secretary.*

IMPORTS OF DRUGS, ETC., AT THE PORT OF NEW YORK, FOR THE MONTH OF JUNE, 1893.

Albumin, 40 casks, 27 cases; blood albumin, 85 cases, 26 casks.

Alizarin, 74 packages, 55 bbls., 36 casks.

Anilin oil, 59 drums; anilin salt, 185 casks, 136 cases, 22 bbls.

Aloes, 560 boxes, 72 cases, 26 bbls., 10 kegs.

Ammonia, 30 casks, 5 drums; ammonia sulphate, 813 bags; ammonia carbonate, 65 casks; ammonia muriate, 50 casks; sal ammoniac, 55 casks.

Aluminium sulphate, 58 casks.

Antimony salt, 20 casks.

Alkali, 408 casks, 36 packages, 13 cases.

Analgesin, 1 case.

Aërated water, 245 bbls., 9 half-cases, 5 half-bbls.

Arsenic, 812 casks, 100 kegs.

Asafœtida, 20 cases, 6 packages.

Buchu, 133 bales; buchu leaves, 30 bales.

Borax, 3 casks.

Balsam of copaiba, 11 cases, 10 boxes.

Boracic acid, 104 casks, 20 kegs.

Chemicals, 1,226 casks, 494 cases, 169 bbls., 141 packages, 25 drums, 4 carboys.

Cacao butter, 80 cases, 78 bags, 24 bales.

Chamomiles, 12 casks, 4 cases, 2 bales.

Cod-liver oil, 175 bbls., 202 casks, 1 case.

Castor oil, 502 cases.

Camphor, 280 tubs, 196 packages, 31 cases.

Citric acid, 25 casks.

Cinchonine, 2 cases.

Colocynth, 3 cases; colocynth apples, 16 cases.

Ceresin, 10 cases.

Carboleum, 247 tubes.

Cardamoms, 7 cases.

Capsicums, 100 bags.

Cantharides, 1 case, 3 bbls.

Carlsbad salt, 5 casks.

Cocaine, 5 cases.

Cinnamon-leaf oil, 1 case.

Citronella oil, 13 drums.

Cassia, 50 cases; cassia buds, 200 cases.

Carbolic acid, solid, 162 casks, 48 cases, 120 bottles; crude carbolic acid, 5 casks.

Crystal carbonate, 350 bbls.

Drugs, 336 packages, 171 cases, 9 casks, 3 bales, 1 bbl.; druggists' materials, 56 cases; druggists' sundries, 49 cases.

Essential oil, 60 cases, 48 boxes, 19 bbls.

Ergot of rye, 16 bags.

Eucalyptus oil, 6 cases.

Eau de Cologne, 30 cases.

Euphorbia, 3 bags.

Fuller's earth, 2,616 bags, 4 cases.

Fish-sounds, 5 bags.

Flowers, herbs, and bark, 206 bales, 34 packages.

Flower-water, 50 packages.

Glycerin, 981 casks, 476 drums, 50 bbls., 10 cases, 72 iron drums.

Gentian root, 229 bales.

Gum tragacanth, 25 cases, 5 bags.

Galls, 74 bags; gall extract, 20 bbls.

Haarlem oil, 26 cases.

Iodine, 200 bbls.

Ipecacuanha, 30 bales, 2 bags.

Juniper berries, 150 bags.

Jalap, 10 bales, 5 bags, 1 sack, 1 package.

Leaves, 59 bales, 1 case.

Lycopodium, 13 crates.

Leeches, 22 packages, 6 cases.

Lavender flowers, 60 cases, 23 bales.

Liquorice, 124 cases; stick liquorice, 397 hhds.; liquorice root, 22,556 bales; liquorice paste, 100 cases.

Lime sulphate, 5 casks; salts of lime, 20 kegs; citrate of lime, 50 casks; chloride of lime, 117 casks.

Malt extract, 5,100 cases, 66 casks.

Menthol, 3 cases.

Myrbane oil, 6 casks, 20 cases.

Milk sugar, 4 cases.

Magnesia, 105 cases, 10 tierces, 20 packages, 50 casks.

Medicine, 15 cases, 1 package, 1 box.

Mercury, 16 cases.

Nitrate of strontia, 40 kegs.

Nitronaphthalene, 5 bbls.

Orange-flower water, 35 cases, 5 bbls.; orange flowers, 4 bales.

Oxalic acid, 229 casks.

Opium, 34 cases, 7 packages.

Oil sesame, 25 casks, 10 bbls.

Oil rosemary, 4 cases.

Oil of juniper berries, 2 cases.

Perfumery, 322 packages, 61 cases.

Potash, 317 casks, 120 drums; bicarbonate of potash, 10 bbls.; muriate of potash, 6,500 bags; sulphate of potash, 500 bags; bichromate of potash, 12 casks; chlorate of potash, 1,920 kegs, 140 casks; hydrated carbonate of potash, 16 hhds.; carbonate of potash, 25 casks; prussiate of potash, 115 casks.

Phosphate, 14,660 bags.

Phosphorus, 50 cases; phosphoric acid, 31 cases.

Precipitated chalk, 25 bbls.

Picric acid, 40 cases, 14 boxes, 3 casks.

Quinine, 191 cases.

Roots, 447 bales, 40 packages, 14 bbls., 2 cases; dry roots, 64 bales; powdered roots, 21 bales.

Rose-water, 69 packages, 55 bbls., 35 cases.

Rape oil, 443 bbls.

Rhodan barium, 4 casks.

Sponges, 1,842 bales, 375 cases, 97 packages, 60 bundles.

Sarsaparilla, 225 bales.

Salicin, 5 cases.

Safrol, 55 cases.

Saccharin, 2 cases.

Soda, 1,151 bbls., 431 casks, 20 cases; soda salts, 426 kegs, 12 cases; soda crystals, 140 casks; nitrate of soda, 46,656 bags, 3 casks; bicarbonate of soda, 450 kegs; crystals of concentrated soda, 10 cases; yellow prussiate of soda, 3 bbls.; phosphate of soda, 20 bbls., 19 casks; bichromate of soda, 60 casks; carbonate of soda, 20 casks; chlorate of soda, 94 casks, 70 kegs.

Senna, 49 bales, 36 packages, 4 cases; senna leaves, 10 bundles, 1 box.

Tartar, 847 bags, 448 casks, 258 sacks, 106 bbls., 98 packages; raw tartar, 54 casks.

Tinctorial extract, 10 casks, 1 case.

Toluidine oil, 20 drums.

Verdigris, 10 casks, 5 bbls.

The Manufacture of Liquors and Preserves. Translated from the French of J. De Brevans. With sixty-five illustrations. New York: Munn & Co. Price, $3 00.

An idea of the scope of this compact manual of 190 pages may be gained from the following abstract of its contents:

Part I.—Chapters I, II: Alcohol; distillation; old methods of distillation; distillation of wine; Laugier's apparatus; Deroy and Egrot's apparatus; distillation of alcohol for industrial purposes; alcohol from beets and potatoes; alcohol from grain; purification of alcohol; rectification of alcohol. Chapter II: Natural liquors; brandy; *kirsch;* plum brandy; rum; tafia; natural brandies; artificial brandies.

Part II.—Chapter I: Plant of the distiller, with illustrations of a first-class installation. Chapter II: Raw materials; essences and their extraction; perfumed spirits; formulas for essence of absinthe, aloes, bitter almonds, benzoin, bergamot, cinnamon, etc. (fifty formulas); alcoholic tinctures; spirits; distilled waters; juices; simple syrups; coloring materials; compound syrups (32 formulas). Chapter III: Liquors by distillation, gives formulas for absinthe of all kinds, angelica, anisette, cacao, coffee, cinnamon, *parfait amour,* chartreuse (three colors), benedictine, trappistine, cumin, kummel, balm, *crême de menthe, maraschino, curaçoa.* Chapter IV: Liquors by infusion; ratafia of black currant; ratafia of quince; raspberry; walnuts; *huile de vanille;* double liquors—cassis, walnuts; cherries, ratafia of four fruits; fine liquors; superfine liquors; *crême d'ananas;* angelica; hygienic dessert liquor of Dr. Raspail; ratafia of currants, cherries, raspberries, walnuts, pears, etc. Chapter V: Liquors prepared from essences. These liquors require no distilling plant, and can be made without the long experience necessary to distill. Formulas are given for absinthe, angelica, anisette, *parfait amour,* mint, noyau, orange, *curaçoa,* orange flowers, rose, *vespétro, eau-de-vie die Dantsig, eau des sept graines, crême de Barbades,* chartreuse, *kirschenwasser, alkermés de Florence, rosolio de Turin, marasquin de Zara,* etc. Chapter VI: Aromatic wines and hydromels; hippocras; vermouth of all kinds. Chapter VII: Medicinal wines. Chapter VIII: Punches. Chapter IX: Clarification and preservation of liquors; filtration; aging; mellowing.

Part III—Preserves.—Chapter I: Brandied fruits.—Apricots, pineapple, angelica, citron, cherries, oranges, chestnuts, walnuts, peaches, pears, plums, and grapes. Chapter II: Fruit preserves.—Apricots, pineapples, cherries, strawberries, raspberries, currants, chestnuts, peaches, plums, etc. Chapter III: Preservation of fruits by the Appert process.

Part IV—Analysis and Adulterations.—Chapter I: Alcohol—Gay-Lussac's tables, very complete; analysis of brandy; sweet liquors, etc. Chapter II: Analysis of sugar and syrups.

Appendix, giving full tables of the metric system, etc. The work is completed with an excellent index.

Guide Pratique pour la Détermination des Poudres Officinales. Par Eug. Collin. Paris: Octave Doin, Editeur.

Mr. Collin, who occupies the post of Demonstrator of Materia Medica at the School of Pharmacy in Paris, and is besides Laureate of the Academy of Sciences and the Academy of Medicine, has furnished in the foregoing a most excellent work on the officinal powders, characterized by convenience of arrangement, by terseness and clearness of description, and by a profusion of reliable and instructive illustrations. Recognizing that the manual labors of the pharmacist, comprising formerly no insignificant part of his functions, are giving way rapidly to the utilization of mechanical agents, and that the extensive manufacture of pharmaceuticals by specially equipped laboratories will remain for all time henceforth a feature of the pharmacist's art, Mr. Collin proposes such modifications in the preparatory studies of the student as will qualify him to test and control, rather than to produce, the remedies which he is expected to dispense. Liberated from the manual labor of manufacture, we may justly demand of the pharmacist that he qualify himself for the quantitative and qualitative analysis of chemical products, as also for the microscopical examination of simple drugs. By proving that he is able to recognize the identity, purity and good quality of medicaments and of the preparations that he employs, he responds to the requirements of his art and office far better than by exhibiting his capacity for their material preparation.

Our French *confrère,* in thus expressing his views of the conditions prevailing in his country, has spoken a word which the wise of our own land will do well to heed.

Sterility in the Woman, and Its Treatment. By Dr. De Sinety. The Bacterial Poisons. By N. Gamaleia.

The above are the latest numbers of the well known Leisure Library of Geo. S. Davis, Detroit. Both are translated by Dr. E. P. Hurd, of Newburyport. The latter is especially interesting to pharmacologists, tracing as it does the successive stages of development in the science of bacteriology, from Gaspard and Panum to Koch and Kitasato.

A TOO BRILLIANT OPERATION.

The other day a man from the country, with the light of battle in his eye and wrinkles in his pants, waited upon Dr. Nihill, of Collins street.

"What can I do for you?" politely inquired that suave young medicine man.

"Dunno yit," replied the man, casting an awe-struck, yet withal menacing, glance around the apartment.

The doctor naturally concluded that he had to deal with one of those beings belonging to the thickset order of intelligence who need to have their symptoms dragged out of them by cross-examination.

"You rise up in the morning and find a fur on your tongue, and your head swollen to twice its normal size?" he insinuated at a hazard.

"Naw, I don't," said the man, and then added, as if in explanation or excuse, "I'm a Rechabite—bin so for years. So that's where *you're* out of yer reck'nin', Mister."

"Then what *is* the matter with you?" inquired the doctor, with a soothing smile. "If *I* can do anything, I'm sure——"

"That's jist wot ye're *got* to do, or there'll be trouble, *I* tell you."

"Well, out with it, whatever it is," said the doctor, still smiling.

"Didn't a lady with a himpediment in her speech come to you a short time back?" observed the man, emphasising his question by laying his gnarled right forefinger on the horny palm of his left hand.

"Yes—what then?"

"And didn't you take away that himpediment?"

"I performed an operation on the larynx and removed an obstruction from the vocal chords. It was successful, wasn't it?" said the medico, with modest pride.

"Too *darned* successful, Mister. That's the trouble."

"What—er—do you mean? Are you a friend of the lady?"

"I'm her husband," replied the man," grimly.

The situation suddenly began to dawn upon the doctor.

"Yes—I'm her husband, and you've done me a mighty bad turn, young feller. That woman's been a model wife for four years past—only spoke when she was spoken to, and didn't say much then on account of the himpediment. But since you performed that bally hoperation on her, life's not been worth living to me. There used ter be peace in the house before that, now there ain't any more peace. She's so bloomin' proud o' bein' able to wag her tongue free that she does nuthin' else from mornin' till night, and I'd jist as soon be livin' in a loonatic asylum, I would."

He broke down and sobbed convulsively for a few moments.

"I'm sorry to have been the cause of this—er—domestic difficulty," said the doctor, "but what would you have me do?"

"Perform another operation on her and tie her tongue ag'in," said the man, "that's what I'm here about. I'll send her in next Toosday. *She* won't know what you want to see her for. And, mind you," he said, taking up his hat and proceeding towards the door, "if ye *don't* do what I've told you I'll put the matter in a lawyer's hands and git a divorce from her, and make you pay the cost of it, young feller."

The moral of this story is that before performing an operation of the kind referred to on a lady, the operator should always make a point of first finding out whether she is married or not. If she is married, her husband may have his own views as to the necessity for the operation.—*Melbourne Punch.*

PUFF, PUFF!

[A banquet of Advertisers is shortly to be held.]

To think of five-score puffers all seated at a table,
A-puffing one another just as hard as they are able:
And each one just contriving (with a cunning eye to pelf),
While he sings his neighbor's eulogies, to advertise himself.
What heights of noble courtesy—no common folk could reach 'em—
When C-RT R's little liver pills say pleasant things of B-CH M!
And Mr. K-NE declares aloud, "I swear upon my soul, man,
Whene'er I eat my beef at home I season it with C-LM-N."
And Sozodont, not left behind in compliments by K-NE,
Says he polishes his wisdom teeth with fragrant Floriline.
And Anti-Stiff declares his faith—which causes a sensation—
In ELL-M-N's, the muscle-friend's, delightful embrocation.
And Mrs. W-NSL-W—bless her heart, the name just makes me chirrup—
Holds nought in all the world can match with Mother S G-L's Syrup.
And L-MPL-GH quite outshouts them all, "No mere saline for me, no,
I always cure the mullygrubs by drinking quarts of E-O."
And finally the Sunlight Soap—I wish I had some shares—
With tears of joy proclaims the name and fame of Messrs. P'RS.
In short, I wish my feeble tongue more faithfully could utter
The thoughts evoked by dwelling on this feast of mutual butter.

—*Punch.*

THE YOUNG IDEA SHOOTS.

The Sister's Beau: So, Johnny, you're going to be a chemist like papa, eh? And did you know this diamond of mine was the same substance as charcoal?

Johnny: No.

T. S. B.: And hasn't papa told you that?

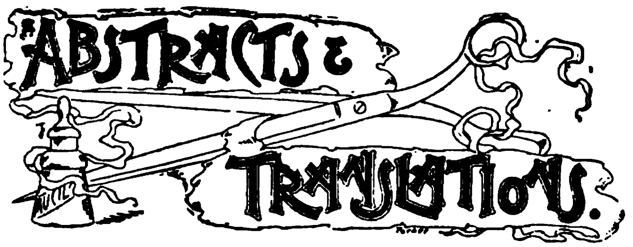
Johnny: No. He said it was paste.

"What did de doctah say ailed yer mostly, Bill?"

"He 'lowed dat I had a conflagration of diseases. Fust, de salvation glan's don't insist my indigestion; dat makes a torpedo liver, cose I'm liable to go off any minute."

"But, Doctor, you said last week that the patient would certainly die, and now he is perfectly well."

"Madam, the confirmation of my prognosis is only a question of time."—*Fliegende Blätter.*


Abstracts & Translations.

The Castor Bean in India.

(*Continued from June number.*)

In Bengal the castor seeds are partially roasted in a pan and pounded in a mortar, without being husked. The stuff so prepared is mixed with water and placed in an earthen pot or jar over a fire, the quantity of water used being 2 or 3 inches above the level of the crushed seed. As the water evaporates, the oil rises to the surface and is then poured into another vessel. The jar is then removed from the fire and allowed to cool, after which some cold water is added to the mixture, when the jar is placed in the sun. The oil still remaining in the mixture then appears at the top, and is removed by hand. The oil thus obtained is boiled again in a separate pan, by which process any moisture and all other extraneous matter are eliminated, and the oil becomes purified and fit for consumption in lamps. There is another process for the extraction of oil from castor seeds followed by the people of this presidency, which differs but very slightly from that already described. In this method the seeds are boiled with water before being pounded. When they become soft they are placed in the sun, and when dry are crushed. Chunaki seed gives 35 per cent. of oil; Gohuma, 37.5 per cent.; and Jagia yields 31 per cent.

The following processes are followed by one of the manufacturers in Calcutta in extracting oil from the castor bean:

(1) The seeds are first cleaned with the hand by women. They place a quantity of seeds on a smooth board, and with a flat wooden mallet give them one or two strokes, which break the seeds into two or three pieces, thus rendering the separation of the husk easy. The broken seeds are then winnowed with a common basket winnower, which removes the husk from the kernel. The kernels are then dried in the sun, and afterwards broken by a crushing machine. They are then put in small canvas or gunny bags and pressed in the hand machine, the oil falling into a pan placed underneath. The oil is collected in large galvanized-iron vats and bleached by exposure to the sun, which also causes the sediment to precipitate. It is next boiled, in order to evaporate any remaining moisture; vegetable charcoal is added to it, and the oil is then filtered through flannel or blotting-paper. The oil thus obtained is of the purest quality, used only in medicine, and is manufactured to order. No fire is applied during the pressing, and hence no irritating part of the seed finds its way to the oil. The yield, however, is 10 per cent. less than that obtained by the following method.

(2) The seeds are husked, crushed, and pressed as before. At the time of pressing, fire is put under the machine, the heat from which liquefies the oil and increases the yield, with which, however, a certain portion of the irritating or injurious part of the seeds is mixed. It is then bleached and boiled as before, and filtered with the addition of animal and vegetable charcoal. This kind of oil is not ordinarily made, but an oil produced in the same manner, except the filtering, is largely manufactured and extensively exported.

(3) The seed is not husked by hand, but by machine, and is therefore not quite free of husk, and the oil, not being so clean, sells at an inferior price.

Some of the jails in India employ many of the prisoners in the manufacture of castor oil. The cleaning and grading of the seeds are done by females, who first remove all extraneous matter, such as dust, pebbles, and foreign seeds, and who then, by means of sieves with different sized meshes, grade the seed into four sizes. The splitting of the shell is done with a machine which consists of two smooth iron rollers placed parallel to one another and working toward one another. It is worked by hand by a simple arrangement of cogwheels. One of the cylinders or rollers is fixed, the other is movable by a screw adjustment. By means of the latter contrivance the space between the cylinders can be regulated to the required distance. The space is increased or diminished according to the size of the seed about to be split. The great point is to give the seed a sufficient squeeze, so as to split the shell, without crushing any of the oily matter out of the kernel. It will now be understood why it is necessary to grade the seed, and experience has taught that castor seed can be placed in four grades according to size. A wooden box is placed above the cylinders to hold about 8 or 10 pounds of seed at a time, which keeps the cylinders constantly supplied. The cylinders are each about 2 feet long, so the process of splitting goes on very rapidly. The use of a mallet and board for the purpose of splitting the seed, as employed elsewhere, is a slow process entailing a large employment of hand labor and the disadvantage of frequently bruising the kernel and prematurely extracting and losing the oil.

The seed is passed on to the winnowers, who separate the husk from the kernel on large masonry platforms. Sunning is a very necessary step in castor-oil manufacture, not only to dry any moisture there may be in the kernel, but to liquefy and facilitate the exit of the oily matter.

The kernel is now taken to the crushing machine, which is similar to the splitting machine, except that the two cylinders work close together and are both immovable. In this the kernel is crushed.

The crushed kernel is now put into pieces of canvas about 15 by 12 inches, the sides of which are folded over so as to prevent escape of the kernel. These canvas bags are placed alternately with iron plates into the screw press, the pressure from which is applied horizontally by means of two powerful screws. Each screw has a wheel fixed to it, in which are sockets for the insertion of lever bars. Four men are generally employed in working the screws by means of lever bars. As pressure is applied to the canvas bags the oil oozes out of them into a trough placed below. At the back of the press a fire is kept up to facilitate the exudation of oil. Each canvas bag holds about a pound of crushed kernels, and each feed of the press requires from one hundred and thirty to one hundred and fifty such canvas bags.

The thick, slimy oil thus obtained is passed into the hands of the boilers, who, mixing it with water in the proportion of 40 parts of oil to from 5 to 8 parts of water, boil it in large copper pans. The boiling of the oil is perhaps the most delicate stage of the whole process of the manufacture. To know exactly when to stop the boiling is a point of knowledge acquired by great experience. Thermometers were used at one time, but the results were not satisfactory. Now the experienced boiler is guided by his eye and by his sense of touch. As soon as he sees that the bubbling of the oil is about ceasing, and finds that the sediment lying in grains at the bottom of the pan has acquired a certain color and certain crisp consistence, he knows the oil is sufficiently boiled, and quickly extinguishes the fire.

The oil is removed, and, after having passed through a bed of charcoal and six or eight folds of calico, is ready for use.

THE OIL IN THE INDUSTRIES.

The castor-oil plant is largely cultivated in Assam to feed the silkworm. An excellent paper pulp is made with the bark from the stems. The oil is frequently used by the Indian dyers, and it has the reputation of being one of the best for dressing tanned hides and skins, as it repels rats and other vermin and does not interfere with subsequent polishing. This oil is the most eligible one for lubricating all sorts of machinery, clocks, watches, etc.; it is the best lamp oil in use in India, giving an excellent white light vying in brilliancy with electricity, far superior to petroleum, rape-seed, mustard, linseed, and all other oils, whether vegetable, animal, or mineral. The slowness with which it burns and its freedom from danger as a lamp oil, is a great recommendation. The railways in India burn it, as the soot it gives out is almost imperceptible. It is used very extensively by the great perfumers in the manufacture of the fancy articles they put on the market, and enters largely into the making of some kinds of varnish. There is no necessity for speaking of its medicinal excellencies.

CASTOR-OIL CAKE.

At the Alahabad East Indian Railway station the lamps are lighted with the gas obtained from the castor-oil cake. It has been found to be an excellent material for that purpose. It is very highly esteemed as a manure, and it is stated that castor cake and bone meal mixed together form a better fertilizer for sugar cane than either of these manures alone. At the Seebpore farm, castor cake proved a better manure than saltpeter for wheat. An acre of land manured with 1,920 pounds of the cake gave 9,966 pounds of potatoes, whereas an acre with 960 pounds of cake and 480 pounds of bone meal gave 7,752 pounds of potatoes, cow-dung giving a return of 5,220 pounds, and an acre not manured at all only 5,100 pounds of potatoes.

CASTOR OIL EXPORTS.

From 1850 to 1881 the export of castor oil expanded from 100,000 gallons to over 3,000,000 gallons. The following table shows the quantity and value of exports of castor-oil cake and castor oil during recent years, the old-fashioned hundredweight being used:

Whither exported.	Quantity.			Value.		
	1889–90.	1890–91.	1891–92.	1889–90.	1890–91.	1891–92.
Castor seeds.	*Cwt.*	*Cwt.*	*Cwt.*			
United Kingdom....	237,388	189,733	81,229	$527,276	$375,810	$148,562
France..............	450,301	447,997	413,796	1,029,622	907,672	736,748
Other countries.....	206,942	222,042	340,900	467,866	432,469	611,481
Total	894,631	859,772	835,925	2,004,764	1,715,951	1,496,891
Castor oil.	*Gallons.*	*Gallons.*	*Gallons.*			
United Kingdom...	782,550	1,101,604	1,384,745	313,724	399,468	448,928
Australia............	1,005,780	1,200,078	1,037,904	420,692	498,573	373,341
Other countries.....	876,660	855,552	851,331	359,972	346,509	318,142
Total	2,664,990	3,157,234	3,273,980	1,094,388	1,244,550	1,140,411

In preparing this report I have been greatly indebted to Dr. George Watt, reporter on economic products with the Government of India.

SAMUEL MERRILL,
Consul-General.

Calcutta, Feb. 22, 1893.

Trapa Bispinosa, L.—The Indian Water Chestnut.*

The Trapas are water plants growing in canals and shallow lakes in Eastern countries, and belonging to the natural order Onagraceæ. *Trapa natans* is the European species yielding the "Jesuits' nut" of Venice. *T. bicornis* is the Chinese species, and affords the "ling"† of that country, which is largely used as an article of diet. *T. bispinosa* belongs to Northern India, and is extensively cultivated in Guzerat, Kashmir and the North-western Provinces. The Trapas have long been known in medical history. It is now generally accepted that the *τρίβολος* of Dioscorides was the same as the Tribulus of Pliny, and that there were two kinds of this plant, the terrestrial and aquatic. The terrestrial is now referred to *Tribulus terrestris* and the aquatic to *Trapa natans*.

The vernacular names of the Indian water-chestnut are *Singhara*, *Paniphul* (Hindustani), *Cingada* (Marathi), and *Karimpola* (Malyalum). Dr. Sleeman writes:‡ "The Singhara, in the N. W. Provinces, is everywhere as regularly planted and cultivated in fields under a large surface of water as wheat or barley is on the dry plains. It is cultivated by a class of men called Dheemurs, who are everywhere fishermen and palankeen bearers; and they keep boats for the planting, weeding, and gathering of the Singhara. The holdings or tenements of each cultivator are marked out carefully on the surface of the water by long bamboos stuck up in it; and they pay so much the acre for the portion they till. The long straws of the plants reach up to the surface of the water, upon which float their green leaves; and their pure white flowers expand beautifully among them in the latter part of the afternoon. The nut grows under the water after the flowers decay, and is of a triangular shape, and covered with a tough brown integument adhering strongly to the kernel, which is white, esculent, and of a fine cartilaginous texture." The nuts ripen at the end of the rains in September, and afford food for the natives for about four months in the year. The celebrated Runjit Singh, of Lahore, derived an income of £12,000 per annum from the cultivation of these nuts, and they are still a considerable source of revenue to the Government.

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* David Hooper, in *Pharmaceutical Journal and Transactions*, July 8, 1893.

† Figured in "Science Papers," p. 241.

‡ Dr. Sleeman's Journal, in "Uesful Plants of India," p. 430.

Singhara is sold at 3 annas a pound; the outer coating is removed, and the white kernel is roasted and pounded to a flour. It is largely used as a food in its season, and is considered cooling in bilious affections with diarrhœa. It is a nutritive tonic for invalids, and is preferred by some to tapioca and sago. The stalks and integuments of the fruits of Singhara contain a red coloring-matter, which the natives are in the habit of throwing over one another during the Holi festival, and sometimes use as a dye. The color, however, is not very permanent.

Some of the fruits were obtained by me in Mussoorie this year. The outer red-brown coats were removed, and the white kernels were sliced and dried in the sun. The powdered nuts had a white color, a sourish odor, and no distinct taste. The starch, observed under a microscope, consisted of oval, oval-oblong, and elliptic granules; there had been no pressure to form angular outlines.

An analysis of the powdered kernels showed the following composition:

Fat	.97
Sugar and gum	14.36
Albuminous matter	8.41
Starch	63.84
Cellulose	3.60
Ash	4.66
Water	4.16
	100.00
Nitrogen	1.33

The nutrient-ratio, or the ratio between the albuminous matter and the starchy materials, is 1:9.5, and the nutrient-value 80.4. This result shows that the Indian water-chestnut is allied to the cereals as a food, and is a little better than cleaned rice, which has a nutrient-ratio of 1:10.8.

One of the interesting points with regard to the Trapas is the capabilities of these plants for taking up manganese. Gorup-Besanez,* in 1861, analyzed the whole plant of *Trapa natans* in June, and found 1.61 per cent. of manganese oxide, and in May 1.68 per cent., and the fruit itself yielded 0.74 per cent. Flückiger drew attention to this fact in a paper† on the distribution of manganese in plants, and later‡ recorded the discovery of manganese in the *T. bicornis* fruits of China. I have tested the ash of the Indian species and have found manganese in both the pericarp and kernal. The 4.66 per cent. of ash in the edible portion contained only a very small quantity of this metal, but the pericarp yielded a reddish-colored ash which was very rich in manganese. In obtaining evidence of the presence of manganese in the ash I found Crum's test work most satisfactorily, on account of the absence of much soluble alkaline chlorides.

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* Watt's "Dict. Chem.," vol. v, p. 878.

† *Pharmaceutical Journal* [3], iii, 208.

‡ *Pharmaceutical Journal* [3], xvi, 621.

Coca Leaves.*

In this paper the author gives a short account of the various substances which have been obtained from coca leaves; with a few exceptions, most of the compounds here referred to have been previously described by him.

Cinnamylcocaine hydrochloride, $C_{19}H_{23}NO_4,HCl + 2H_2O$, crystallizes from water, in which it is readily soluble, in lustrous plates, loses its water at 66°, and melts at 176°; its specific rotatory power in aqueous solution is $[a]_D = -104.1$. The platinochloride, $(C_{19}H_{23}NO_4)_2H_2PtCl_6$, crystallizes in small needles, and is moderately easily soluble in boiling water. The aurochloride, $C_{19}H_{23}NO_4,HAuCl_4$, crystallizes in small yellow needles, and melts at 156°. The methiodide, $C_{19}H_{23}NO_4,MeI$, crystallizes from alcohol in small, colorless needles; the corresponding methochloride is a crystalline substance, readily soluble in water and alcohol, but insoluble in ether.

The molecular formula of homococaic acid, determined in glacial acetic acid solution, was found to be $C_9H_8O_2$. This acid melts at 150°, and dissolves freely in alcohol, ether, chloroform, glacial acetic acid, and hot water, but is only sparingly soluble in light petroleum and cold water; it is only slowly oxidized by a warm solution of potassium permanganate. A number of its salts were prepared and analyzed, but they are all amorphous, ill-characterized compounds. The nitro-derivative, $C_9H_7O_2NO_2$, prepared by warming the acid with nitric acid of sp. gr. 1.52, crystallizes from dilute acetic acid in yellowish needles, melts at 226°, and is readily soluble in alcohol and glacial acetic acid, but more sparingly in chloroform, ether, and boiling water.

β-Cocaic acid, $C_{18}H_{16}O_4$, is formed when homococaic acid is heated for a long time with concentrated hydrochloric acid, or fused with potash; it crystallizes from boiling water in long, colorless needles, melts at 189°, and is readily soluble in glacial acetic acid, alcohol, and chloroform, but more sparingly in benzene, and almost insoluble in light petroleum; its molecular weight was determined in glacial acetic acid solution, with results in accordance with the molecular formula given above. It is only very slightly acted on by potassium permanganate. The potassium salt crystallizes in lustrous prisms, and is readily soluble in cold water. The copper salt, $C_{18}H_{14}O_4Cu+2H_2O$, is a green, crystalline compound, and loses its water at 160°, becoming dark-blue. The silver salt, $C_{18}H_{14}O_4Ag_2$, is stable in the light. The methyl salt, $C_{18}H_{14}O_4Me_2$, is a mobile oil. The dinitro-derivative, $C_{18}H_{14}O_4(NO_2)_2$, prepared by treating the acid with concentrated nitric acid, crystallizes from glacial acetic acid in pale yellow prisms, melts at 252°, and is readily soluble in alcohol, chloroform, glacial acetic acid, and ether, but more sparingly in water.

β-Isococaic acid or δ-truxillic acid (compare Liebermann, *Berichte*, 1889, 2249), prepared from isococaic acid in like manner, has the molecular formula $C_{18}H_{16}O_4$; it melts at 172°, not at 174° as stated by Liebermann. The barium salt, $C_{18}H_{14}O_4Ba + 4H_2O$, crystallizes in short, lustrous prisms; the copper salt crystallizes with 2 mols. H_2O. The dinitro-derivative, $C_{18}H_{14}O_4(NO_2)_2$, crystallizes from dilute acetic acid in small, almost colorless prisms, melts at 226°, and is very readily soluble in alcohol and ether, but almost insoluble in benzene.

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* O. Hesse, in *Annalen*, 271, 180–228; Jour. Chem. Soc., 1893, Abstr. I, p. 57.

Benzoylpseudotropeine methiodide, $C_{15}H_{19}NO_2$-MeI, forms colorless crystals, and is moderately easily soluble in hot, but only sparingly in cold alcohol. The corresponding methochloride, $C_{15}H_{19}NO_2MeCl$, crystallizes in colorless needles or prisms; its platinochloride, $(C_{15}H_{19}NO_2MeCl)_2,PtCl_4 + 2H_2O$, forms small orange needles, and is sparingly soluble in cold water; its aurochloride, $C_{15}H_{19}NO_2,MeCl,AuCl_3$, is a yellow, crystalline compound, sparingly soluble in cold water.

Pseudotropine methiodide, $C_8H_{15}NO,MeI$, crystallizes from hot water in small, colorless, rhombic crystals, and melts at 270°. The methochloride, $C_8H_{15}NO,MeCl$, forms compact rhombic crystals, and is readily soluble in water, but only sparingly in alcohol; its platinochloride, $(C_8H_{15}NO,MeCl)_2PtCl_4$, separates from hot water in crystals, and melts at 216°.

Palmityl β amyrin, $C_{46}H_{80}O_2$, occurs in Trujillo coca; it melts at 75°, dissolves freely in ether, chlorform, light petroleum, hot alcohol, and acetone, and has a specific rotatory power $[a]_D = 54.5°$ in alcoholic solution; on hydrolysis, it yields palmitic acid and β-amyrin. The wax obtained from the broad-leaved coca of Peru and Bolivia consists of palmityl-β-amyrin and cerotone, $C_{53}H_{106}O$, melting at 66°; the wax from Java coca seems to consist of palmityl-β-amyrin, cerotone, ceryl cerotate, myristyl-β-amyrin, and a substance which the author names hydroxycerotic acid.

Hydroxycerotic acid, $C_{27}H_{54}O_3$, melts at 82°, and dissolves freely in hot alcohol and light petroleum, but is only very sparingly soluble in cold ether.

Cerotolic acid, $C_{27}H_{52}O_2$, is formed when hydroxycerotic acid is heated at 100° with acetic anhydride for eight days: it crystallizes in short prisms, and is moderately easily soluble in cold ether and light petroleum.—*American Journal of Pharmacy*, April, 1893.

Mangroves in Sierra Leone.

The effect of the mangroves could be very clearly seen at Mahela and the Samu country generally, and requires a little explanation. The trees seem, in fact, to have been designed by nature to change any bay or indentation of the coast-line into fertile soil. Thus the whole of the country from Mahela to Rokon, and round from Digipali to Kitchom, seems to have been at one time a wide bay or arm of the sea, in which sand and mudbanks accumulated through the action of the tides and currents. Wherever such a mudbank is in process of formation, the mangroves grow upon it, gradually advancing seawards as the silt accumulates. They require brackish water, and their mode of growth is thoroughly adapted to this habit. The trunk divides at the base into six or seven curved buttress-like roots, each of which subdivides repeatedly, so that it covers a wide area with curved grasping supports. This is, however, but the first stage of growth. After a very short time, long hanging roots are sent down vertically from every branch of the tree, and, about the level of high tide, each of these pendant roots divides into five or six grasping fingers, which grow down into the water and root themselves so firmly in the silt that they cannot be torn up by any ordinary force of current. As each branch of every mangrove acts in this way, the soil becomes pierced by roots in every direction—so much so that where the natives have made a clearance for rice-growing, the numerous standing roots in the ground seem like a harrow with the points turned upwards. Hence the leaves of the mangroves and all the silt and soil in the water are held by this meshwork of roots and rootlets, and the accumulation of soil advances rapidly. As the level of the ground (through this accumulation) rises above high tide, the mangroves, which require a constant supply of brackish water, die off, and the whole grove advances seaward, leaving behind it a mass of rich vegetable alluvial mud, better suited for rice than probably any other soil in existence. In mapping out the windings of the Mahela creek, we constantly saw how the mangroves were blocking up the channels, and no doubt in course of time the whole creek will become solid land.—G. F. Scott Elliot in *Colonial Report* (*Pharmaceutical Journal and Transactions*, July 8, 1893).

Doctors' Profits.

An effort is being made in a large city to organize a stock company for compounding and dispensing physicians' prescriptions and the sale of medical appliances exclusively, and parties in this enterprise are soliciting physicians to take shares at $10 each. The capital stock is to be $100,000. The object apparently is to organize a substitute to take the place of the "usual" percentage on prescriptions which some physicians are reported to demand from the druggist who dispenses them, and, at the same time, encourage a formidable competition to the legitimate drug business. If a few physicians can successfully get up a combination of this kind and dispense prescriptions, so as to divide the legitimate profits of the drug business between themselves, there is no reason why the same example cannot be followed on a larger or smaller scale in every city and town in the country, and, as a result, the profits of the drug business would be very materially reduced.

If we are to have an open rupture of this kind, the sooner the druggists of the land know it, the better it will be for all parties; for, should a number of respectable physicians decide to go into a warfare of this kind, it would seem that one way of meeting this new competition would be for druggists to organize a co-operative dispensary and furnish medical advice free. Or, a still better plan—one which the medical profession is gradually forcing druggists to adopt, and which in time will probably be universal, if infringements of this and similar kinds continue to be adopted by physicians—would be for each druggist who expects to make a living out of his business to graduate as a physician, and practice medicine in his drug store. If necessary, he then could furnish medical advice free and dispense his own prescriptions.

To some this may appear as a radical measure, but after physicians have largely gone into the practice of furnishing their own tablets, medicines, etc., and then, on top of all that, organize a company to dispense the rest of their prescriptions, we think that an opportunity will come for timid druggists to take a bold stand or close out and go into some other business.—*Druggists' Circular.*

Little Jokes from the Prescription Case.

The following recipes have been collected by Dr. Winkler, according to the *Sudd. Apoth. Ztg.*, from pocket recipe-books and from an article in *Journ. de la Santé.* Without referring to the chemically wrong formulæ, such as plumb. acet. and zinc. sulphur., morp. muriat. and liq. amm. anis., there are a lot of well known recipes often issued under celebrated names that are but rank nonsense, *e. g.*, Brugnotelli's Elixir, which in 100 grammes of tincture contains 50 grammes of sulphuric acid. The "Pilules Febrifuges" of Desbois de Rochefort are prepared as follows:

℞	Cort. chinæ pulv	30.0
	Tart. stibiat	0.80
	Kali carbonic	4.0
	Syrup absinthi	60.0

M. et ft. boli No. 60. To be taken in twenty-four hours.

These boluses are as large as a nut, and—just think of it—to take 60 in one day!

Another well known French formula is as follows:

Decoctum hordei	5000.0
Syrup de Cuisinier (a sort of sarsap. comp)	600.0
Liquor van swieten	30.0

Altogether 5½ liters; how long will it take to use that quantity up as a gargle?

In the Hospital Lariboisière at Paris they frequently prescribe:

Kali chloric	10.0
Aq	1000.0

M. d. s. Mornings and evenings a teaspoonful.

That quantity prepared is enough for a company of soldiers.

Diefenbach's Mixtura Strychni contains 0.05 gramme strychnine in 60 grammes fluid, and of this two tablespoonfuls are to be taken daily!

Trousseau and Pidoux recommend in the "Traité de Thérapeutique," tinctura colchici in doses of 2 to 13 grammes. Even after 2 grammes, vomiting and symptoms of poisoning show themselves.

The French "Potio moschata" contains 3 grammes of musk; and the "Looch au goudron" (emulsion of tar) 12 grammes powdered safran.

A parallel to the above gargling-liquid is Jodelot's "Ungt. ophthalmicum:"

Calomel	0.25
Sapo medicatus	250.0
Ol. olivæ	500.0
Aq. dest	30.0

M. f. linimentum.

It makes 1.3 kilogrammes—enough for a full-grown elephant.

As an opposite example we have "Ungt. diureticum:"

Bulb. scillæ pulv	2.0
Ungt. hydrarg. ciner	5.0

S.: To rub on the back.

How far will that go down the back?—*Deutsch.-Am. Apotheker Zeitung*, July, 1893.

TAKING CARE OF A MICROSCOPE.—When through using the microscope, separate the various parts as much as is necessary, and wipe them perfectly clean and dry with a silk handkerchief or a piece of chamois skin.

APPLICATION TO PREVENT THE STINGING OF INSECTS.—Pednof recommends for this purpose a concentrated solution of naphthalin in paraffin oil. A few drops are to be rubbed upon the exposed parts of the body. The application produces a temporary slight burning sensation which soon passes off. The offensive smell of naphthalin would, however, be a probable objection in some instances.—*Revue de Thérap.*

CASCARA AS A TÆNIAFUGE.—Against tape-worm, Stephens recommends cascara sagrada. He uses the following prescription:

℞	Fluid extract cascara sagrada	24.0
	Syrup of orange peel	100.0

M. d. s. One teaspoonful three times daily. For children, half a teaspoonful three times daily.

—*Therapeutische Monatshefte*, June, 1893.

DETECTION OF STRYCHNINE.—Beckurts has made experiments to determine the extent to which the presence of brucine interferes with the detection of strychnine by the reaction with potassium dichromate and sulphuric acid. With a mixture of strychnine and twenty parts of brucine a distinct reaction is obtained, and when the proportion of brucine is twice as great an indistinct reaction is observable. But in this case the actual quantity of strychnine must be at least one milligramme, while $\frac{1}{100}$ of a milligramme gives the reaction in the absence of brucine, according to the observations of both Dragendorff and De Vrij.—*Archiv der Pharm.*

EFFICACY OF ALUMNOL.—Alumnol is recommended as an antiseptic astringent. It is an aluminium salt of a naphthol-sulphonic acid. It is quite soluble in hot or cold water and in glycerin, less so in alcohol, and insoluble in ether. As an antiseptic, a 1-per-cent. solution kills anthrax spores after twenty-four hours; while 0.01-per-cent. solutions retard the development of most toxic organisms, and 0.4-per-cent. solutions absolutely prevent all growth. In 10- or 20-per-cent. solutions it is not corrosive, but causes violent irritation. It is especially useful in gonorrhœa, as it penetrates deeply into the tissues. Pencils of 2 to 20 per cent. were used, the strength varying with the quickness of the effect desired.

Iodine Collodion as a Depilatory.—Butte, in *Monatschr. für Prakt. Dermatologie*, recommends the use of the following preparation for the removal of superfluous hair:

Spirit	12.00 grammes.
Pure iodine	0.75 gramme.
Collodion	35.00 grammes.
Oil of turpentine	1.50 grammes.
Castor oil	2.00 grammes.

This is applied once or twice daily for three or four successive days to the parts from which the hair is to be removed, increasing from day to day the thickness of the layer.

Potassium Permanganate as an Antidote to Organic Poisons.—Experiments made by Antal on frogs, rats, and dogs, demonstrate that potassium permanganate exercises a quick and powerful antidotic influence on a series of organic poisons, among which he names muscarin, strychnine, colchicin, oxalic acid, and oil of sabine. The remedy was administered freely in aqueous solutions of from one-third to one-half of 1 per cent. The author is still engaged in the investigation of the subject, and will probably add others to the list of poisons to which the permanganate is an antidote. The remedy may be administered by the mouth or subcutaneously, the latter acting more rapidly.—*National Druggist*, July 1, 1893.

Solutions for Charging Fire Extinguishers.—Hunkel recommends the following as the best solution for charging hand-grenades or other similar forms of fire extinguishers: Make the following solutions in separate vessels: (1) 2 parts of ammonium chloride in 200 parts of water; (2) 3½ parts of burnt alum in 100 parts of water; (3) 30 parts of ammonium sulphate in 50 parts of water; (4) 20 parts of cooking salt in 400 parts of water; (5) 3½ parts of sodium carbonate in 50 parts of water; (6) 45 parts of water glass. Now mix these solutions in the order named, and while the mixture is still turbid and yellow add 200 parts of water. Let stand, and when the precipitate has subsided decant the clear liquid and fill into hand-grenades or bottles of thin glass.—*National Druggist.*

Decomposition of Iodoform.—The decomposition of iodoform under the influence of sunlight takes place much more readily when it is dissolved in chloroform than when dissolved in other solvents. This is attributed by Kinzel to an acceleration of the change produced in chloroform by contact of oxygen under the same condition, the effect produced by the greater susceptibility of iodoform to the action of oxygen being the reverse of that produced by alcohol in retarding the decomposition of chloroform. He assumes, therefore, that the mere presence of iodoform facilitates the action of oxygen upon the chloroform in which it is dissolved, and that the chloroform acts the part of a carrier of oxygen to the iodoform, the reactions taking place being as follows:

$$CHCl_3 + O = COCl_2 + HCl$$

and

$$2CHI_3 + 3COCl_2 = 2CHCl_3 + 6I + 3CO.$$

—*Pharmaceutische Zeitung*, 38, 387.

Reactions of Paraphenol Carbamide.—The reactions of this substance, whose commercial name is dulcin or sucrol, are thus given by Dr. Neumann-Wenden in the *Pharmaceutische Post:* If to a portion of dulcin, in a porcelain capsule, fuming nitric acid be added, a violent reaction is at once set up, and a fine orange-yellow coloration is developed. If the product thus obtained be heated to dryness in a water bath, a resinous orange-yellow residue is obtained, which is soluble in alcohol, ether, and chloroform. If a portion of this resin be rubbed up with a mixture in equal parts of phenol and concentrated sulphuric acid, the color changes to a blood-red, which is very constant and may be exposed to the air for a considerable length of time without fading.—*National Druggist*, July 1, 1893.

Electrolytic Separation of Metals.—Smith and Moyer confirm the fact previously stated that mercury and bismuth cannot be separated electrolytically when present in a nitric acid solution. In the case of copper and antimony they have attempted to find a better and more certain method than any that have been previously published. By combining solutions of the two metals in the presence of tartaric acid and ammonia, results were obtained on electrolysis which showed that the separation was very satisfactory. The copper deposited showed no trace of antimony, and practically theoretical amounts were found throughout a series of experiments in which the relative quantities of the two metals were purposely varied to render it certain that the method could be relied upon.—*Journal of the American Chemical Society*, xv, 28.

Preparations of Hypnal.—Hypnal (monochloral-analgesin) seems to be rapidly coming to the front as a hypnotic, pure and simple. Filhene gives, in the *Berliner Klinische Wochenschrift*, the following formula for its administration:

Hypnal	10 grammes.
Distilled water	100 grammes.

Mix and dissolve. The dose is one tablespoonful at bedtime. In case sleep is not produced in half an hour, give a dessertspoonful.

Instead of 100 grammes of water, 80 grammes of the latter and 20 grammes of any desirable syrup may be used.

Hypnal may be given in substance if desirable. The dose is 1 to 2 grammes, which should be administered in capsules or cachets.—*National Druggist.*

New Series of Coloring Matters.—A. Trillat has investigated the action of formic aldehyde upon the derivatives of triphenylmethane and other coloring matters, and describes a new series of colors that he has thus obtained. Rosanilin yields a fine violet product, which is, however, very unstable in the presence of light, whilst safranine forms crystalline salts which possess a brilliant metallic appearance and readily dye silk, wool, and cotton, without the aid of mordants. He concludes by stating that formaldehyde reacts freely with simple and compound amines of the aromatic series, in which at least one atom of hydrogen is replaceable, and that the shades of the amido coloring matters are profoundly modified by the substitution, being changed generally in a direction corresponding to the right with regard to the colors of the spectrum.—*Comp. Rend.*, cxvi, 1382.

CHOLERA AND THE FILTRATION OF WATER.—Prof. Koch, in an article in the *Zeitschrift für Hygiene*, draws attention to the practical importance of efficient filtration of water as a defense against cholera. Though Hamburg and Altona are connected so as to form practically one town, and both obtain their water supply from the Elbe, they have been very differently affected during the late outbreak of this disease. Other things being equal, it would naturally be expected that Altona would suffer worse than Hamburg, since it obtains its water from the river below the city, and consequently after contamination. But whilst the purer water supplied to Hamburg is unfiltered, that supplied to Altona is filtered through beds of sand. These act by the formation of a slimy layer on their surface, and when the water is prevented traveling at a quicker rate than 100 millimeters per hour it is so well filtered that it does not contain more than 100 germs per cubic centimeter, and these are perfectly harmless ones. As a consequence it was found, when the cholera was rife, that a sharp dividing line indicated the limits of the two water-supplies, Altona and part of Hamburg receiving the same service being almost completely free from the disease while the epidemic was at its height close at hand. Domestic filtration of water is regarded by Koch as thoroughly unreliable, water naturally filtered being, in his opinion, much better when the process of filtration is efficiently conducted and care taken to avoid after-contamination of the water.—*Pharmaceutical Journal and Transactions*, July 1, 1893.

THE PREPARATION OF HASHEESH.—Assistant-Surgeon Asutosh Ghose, writing in the *Indian Agriculturist* on majoom or hasheesh, thus describes its preparation: Mojoom is prepared from the leaves, tops, and tender parts of the plant called *Cannabis Indica* or *C. Sativa.* Four ounces of such parts of the plant are taken, free from unripe fruit, flowers, or other impurities. They are thoroughly washed, and 3 oz. of pure butter added to the leaves, with about 4 oz. of water. All these ingredients are put together in an earthen pot over a slow fire. The water is allowed to evaporate, leaving in the pot the buttered leaves, which are now strained through a piece of muslin. The strained greenish extract is removed with great care, the other impurities on the muslin being thrown away. The extract is then washed with pure water twice. In another pot about 16 oz. of sugar, with 32 oz. of water, and a little milk, are boiled. By repeated boiling and mixing of milk a syrup is prepared. In this syrup the greenish, oily extract is put, and boiled on a slow fire. Now is the time to mistify the preparation. Some add dhatura seeds; others nux vomica seeds in finest powder. But the usual practice in Bengal is to add a few drops of otto of roses, or a few grains of musk, powdered cardamom seeds, and sometimes a minute quantity of opium. After boiling half an hour, the whole mass is poured into a flat basin. It solidifies, and is cut into cakes. Sometimes the best hasheesh is sold at sixteen rupees a seer, but usually the price is four rupees. Hasheesh is the Arabic Hashish, which means "green, intoxicating liquor," probably derived from the Hebrew *shesh*, which means "to be joyous."—*Chemist and Druggist*, July 8, 1893.

GIBELLI ON CEREUS GRANDIFLORUS.*—Experiments instituted with this drug by Gibelli yielded the following results: Elevation and strength of the pulse are increased, which is a result not so much of the increase of blood pressure as of the diminished vascular tension. The remedy has definite properties in arythmia, which it overcomes in most instances; the frequency of the pulse, however, remains unaffected. So far as the respiratory apparatus is concerned, with special reference to the symptoms usually accompanying heart affection, the remedy has no considerable value; further, it produces no increase in the secretion of urine (in most cases augmentation of the quantity of urates); neuralgic and rheumatic pains are often alleviated; one instance of Morbus Basedowii was greatly improved. The remedy is generally well borne.

When given in moderate doses, 50 to 200 drops of the tincture *pro die*, no toxic symptoms are produced. Its employment can also be prolonged without injury for months. The favorable effect upon the circulation is to be explained through regulation of the pulse and the favorable action on the arterial diastole whereby the peripheral resistance to circulation is reduced. In no case are the therapeutic effects of long duration; they keep even pace with the employment of the remedy. On the basis of his experience, Gibelli believes that the remedy is not to be recommended in organic defect of the heart, with the exception of cases of severe arythmia and when other cardiac remedies have proved futile. It is to be recommended, however, in functional disturbances of the heart, of whatever origin, but especially when preceeding from nervous causes.

ANIMAL CHARCOAL AS A PILL EXCIPIENT.—E. Viole suggests that when creasote, croton oil, terpinol, essential oil, or other medicament difficult to combine, is to form an ingredient of pill masses, they may be prepared quickly and satisfactorily by employing animal charcoal as an absorbent. Thus, to dispense 1 gramme of creasote in twenty pills, it should be added to 2 grammes of charcoal in a mortar and quickly mixed so as to form a soft paste. More charcoal is then added, about half a gramme at a time, until a moist powder, not adhering to the pestle or mortar, results. Then, on adding a fifth to a fourth of a gramme of turpentine and kneading quickly, a perfectly homogeneous and plastic mass is obtained. Croton oil is said to make a good mass with the charcoal alone. More complicated formulæ may be similarly dealt with. For instance, if creasote is to be dispensed with tannin and iodoform, it should be blended with charcoal as when prescribed alone, the other ingredients next added and the whole intimately mixed, turpentine being then used to bind all together. Pills so prepared are said to be very small, whilst they have the disagreeable odor of the creasote masked to a great extent, and it is claimed that they may be rolled in magnesia, silvered, or coated with tolu. In dispensing similar medicaments in cachets, washed animal charcoal is also stated to be of value, 5 grammes serving to divide 2 grammes of creasote, whilst 10 grammes serve for 5 of turpentine. It is urged that by the aid of this substance the pharmacist can prepare and vouch for the exact dose and quality of the remedies in all the capsules, coated pills, etc., that he may require to dispense, and so avoid the necessity of purchasing them from wholesale manufacturers.—*Bull. de Pharm. de Bordeaux*, May, 142 (*Pharm. Journal and Trans.*).

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* Translated from *Therapeutische Blätter*, June 25, 1893, p. 165.

INSECTS INJURIOUS TO DRUGS.—In the *American Journal of Pharmacy*, Professor L. E. Sayre publishes a scholarly article on "Insects Injurious to Drugs," with two plates illustrative of those he has investigated. He concludes the article as follows:

Our observations so far have shown: *First*, that the most destructive insects are the beetles or sheathed-winged insects. With the exception of one moth and one mite, all the insects received at the University and mentioned in this article are beetles. *Second*, that the greater part of the drugs attacked and destroyed are vegetables or vegetable products; and hence, that these need the greatest care and watchfulness. *Third*, that there is need of greater vigilance and more observation on the part of druggists, if these pests are to be successfully driven out. One druggist, when asked if he had ever noticed anything destroying combs, said he had never heard of such a thing; but upon investigating his own stock, he found out of a small lot two combs that were destroyed. Yet he could hardly believe that insects are capable of such work.

I shall have nothing to say in this article as to the means of prevention and the use of repellents such as have been frequently suggested in current pharmaceutical literature. It is my desire to enter this field of investigation, and anything that the druggists of the United States can do to aid in the matter will be appreciated. Attention must be given to the life history of some of these insects. We should know what materials the insects breed in, what time they deposit their eggs, and make all the observations possible. From these notes a systematic study of the pests can be made. and results of practical value can be obtained. The Swedes, in the time of Linnæus, alarmed at the way in which their ship timber was being destroyed by a certain larva, applied to the noted naturalist for aid. He told them that if they would sink their ship timber in the sea during the month of May, they would be bothered no further by this larva, for the beetle which is the parent of the grub deposits its eggs in the timber in the month of May, and at no other time of the year. If we had a more comprehensive knowledge concerning the habits and life history of insects injurious to drugs, it is very probable that easy means of preservation and prevention of insect destruction might be used.

A NEW MACHINE FOR CUTTING AND GRINDING THIN SECTIONS OF ROCK AND MINERAL.—A brief desription of a new machine for cutting and grinding rock sections, in which electricity furnishes an economical and satisfactory motive power, may prove acceptable to the constantly increasing number of workers in mineralogy and petrography. This machine was devised for the petrographical laboratory of the Johns Hopkins University over a year ago, and since then it has been in more or less constant use.

It has thoroughly established its reputation for accurate and rapid work, while experience has suggested some improvement on the original model.

The machine consists of a substantial table carrying in its lower part the electric batteries and motor, while upon its upper surface is placed the apparatus for grinding and sawing. The table is approximately three and one-half feet square and two feet nine inches high. It is constructed, with all of its appurtenances, by the Donaldson-Macrae Electric Company (of 215 North Calvert street, Baltimore), whose storage batteries and electric motors are well known. The price of the machine complete is $130, consisting of the following parts: 1. Three 200-ampere hour storage batteries, 13 inches high, in portable rubber cases. These batteries stand on a firmly constructed cross-piece from which they may be readily removed for recharging. 2. One one-eighth horse-power electric motor of the Donaldson-Macrae pattern. This is fastened to a second cross-piece above the batteries and below the table surface. It is provided with two pulleys from which belts pass to the shafts on the table, which carry the grinding disks and diamond saw. The grinding apparatus consists of two circular disks of solid copper 9 inches in diameter and three-eighths of an inch thick, which may be used alternately as different grades of emery are required. They are attached either by a screw or square socket to a vertical iron spindle which revolves smoothly in a conical bearing. The grinding disk is surrounded when in use by a large cylindrical pan of tin which has an opening in its centre to allow of the passage of the spindle. 4. The sawing apparatus consists of a horizontal counter-shaft placed on a different part of the table from the grinding disk, and connected with the motor by a separate belt. It carries at one end a vertical wheel of solid emery, and at the other an attachment, level-table and guide for the diamond saw. A small water-can and spout are suspended over the level-table to keep the edge of the saw wet when it is in use.

Under some circumstances it may be found advantageous to obtain electricity for this motor by a direct wire from an electric light or power company. Considerable inquiry has shown, however, that in Baltimore the storage batteries are more convenient, safe, and economical; a single charge lasts for the needs of a laboratory of ten students for a month. The batteries are removed by the electric company, and returned with little or no delay, at a cost of $3.75 for recharging.—George H. Williams, Baltimore, Md., in *American Journal of Science*.

PHYSIOLOGICAL ACTION OF CHEMICAL SUBSTANCES.—In an address to the Chemical Society of Aix-la-Chapelle, Dr. A. Eichengrün has dealt with the subject of the medicinal action of compounds, and he expressed the opinion that, in the present state of science, there is no foundation for the hypothesis of a relation between chemical constitution and physiological action. It was pointed out that on the one hand substances, such as analgesin and acetanilid, which have chemically little relation, produce similar effects on the animal organism, while on the other hand bodies of closely related chemical constitution are sometimes very different in their physiological action. Moreover, alterations which scarcely affect the chemical character of certain substances, such as substitutions, preparations of homologues, etc., are accompanied by very considerable differences in physiological action, as, for instance, the neutralization of the marked hypnotic action of sulphonal by the substitution of the methyl group for ethyl. It cannot be denied that in some instances there are grounds for inferring from the action of a body upon isolated constituents of the organism, such as albumin, the action that the body will exercise in the living organism. There are also some striking instances of relation between the chemical constitution of bodies and their action, as shown by the similar action of all compounds of the same metals (K,Hg,Fe,Zn), and by the corresponding effects of various chemically related compounds, such as those of phosphorus, arsenic, and antimony; of iron and manganese; of zinc and cadmium. But in deducing from chemical behavior conclusions as to physiological action, erroneous results may be arrived at if all the determining conditions are not considered. Not only are physical conditions of importance—solubility, etc.,—but very minute differences of composition or constitution are sometimes accompanied by disproportionate differences in effect. Moreover, in the living organism most substances act in a manner different from that anticipated, partly because they happen to be brought into contact with other substances than those upon which they were intended to act, and are thus altered before exercising the action desired. Sometimes the action in the organism is quite different from that outside of it, so that substances capable of resisting chemical influences in a high degree, readily break up under the influence of vital processes, and, on the contrary, readily decomposable substances are not altered under those conditions. Dr. Eichengrün regards as equally fallacious the arguments from analogy, such as those relating to the increase of activity of alcohols being connected with increase of molecular weight, or the greater activity of para compounds as compared with ortho or meta compounds. Methyl alcohol has a stronger action than ethyl alcohol; salicylic acid has decidedly greater antiseptic action than the meta or para benzoic acids. This criticism appears, however, insufficient to shake the belief in a connection—at present mysterious—between chemical constitution and physiological action, but so far as it applies it points merely to deficient knowledge.—*Pharmaceutical Journal and Transactions*, July 1, 1893.

A METHOD FOR PRESERVING SPIRITUS ÆTHERIS NITROSI.*—With the object of ascertaining the effects of light and heat on the composition of the spirit, and whether the addition of glycerin would have any influence, beneficial or otherwise, on the chemical changes which took place during the storage of it, the writer had made a number of experiments. A strong spirit of nitrous ether was made by the pharmacopœial process. One part of it was diluted with rectified spirit as directed in the Pharmacopœia; a second part with rectified spirit and glycerin so that the finished product contained 5 per cent. by volume of glycerin; and a third part with rectified spirit and glycerin so that the finished product contained 10 per cent of the latter. The various samples were exposed to different temperatures and degrees of light for a month, and then examined for NO gas by Allen's process, for aldehyde by Thresh's method, for free nitrous acid, for free acetic acid, and for total free acidity—the last three having been examined by the method described by Mr. Peter MacEwan, but substituting alcoholic for aqueous solution of soda. To eliminate the influence of light when the effect of temperature was registered, three sets of samples were kept in the dark, one at a temperature averaging 35° F., another at temperature 55° to 60°, and a third at from 70° to 75°. To eliminate the influence of temperature when the results of exposure to light were wanted, one set was kept in the dark, a second was exposed to diffuse daylight, and a third to direct daylight, the temperature in every case having been the same, viz., from 55° to 60°. The results, which were detailed in tabulated form, showed that the effect of increased temperature tended to cause, first, loss of ethyl nitrite; second, slight diminution of the aldehyde; third, increase of free nitrous acid; fourth, increase of acetic acid; and, fifth, consequent increase of total free acidity. Five per cent. of glycerin tended to diminish the loss of ethyl nitrite, and retarded the formation of aldehyde and free acids, while the addition of 10 per cent. prevented in great measure the loss of ethyl nitrite, retarded the formation of acetic acid and total acidity, and reduced the percentage of aldehyde and nitrous acid as temperature increased. The effect of light was to cause loss of ethyl nitrite, and increase of nitrous acid, free acetic acid, and total acidity. The addition of glycerin had results similar to those attending its use in temperature tests. On the whole, the writer stated, the addition of glycerin at least in a proportion of 10 per cent. by volume is favorable to the keeping of the spirit without entailing much trouble. The solution of pure ethyl nitrite in absolute alcohol, although not liable to alteration, does not seem to have come into general use—possibly on account of the price, or, as suggested by Professor Leech, on account of the large proportion of alcohol it contained, which might be undesirable in some cases. On the other hand, the addition of glycerin to sweet spirit of nitre, white tending to preserve it, would not alter its characteristic taste or smell to any appreciable extent, and, if adopted, it might obviate the necessity of introducing the more expensive solution of ethyl nitrite in glycerin and the absolute alcohol. Experiments had also been made to show the effect of stoppering, and the results of badly fitting stoppers were loss of ethyl nitrite, loss of aldehyde, increase of free nitrous acid, and decrease of acetic acid and total acidity.—*American Journal of Pharmacy*, April, 1893.

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* *Chemist and Druggist*, Feb. 18, 1893. Abstract of a paper read at Edinburgh, Feb. 15th, before the North British Branch of the Pharmaceutical Society, by A. Meldrum.

MORPHINE VERSUS PTOMAINES.*—Since the late trial of Dr. Robert Welsford Buchanan for the murder of his wife, by poisoning her with morphine, the subject has excited more than usual attention in medical-legal circles, and is considered of vast importance when viewed from this standpoint. The chemists who made the analysis of the stomach, Drs. Witthaus and Doremus, are analysts enjoying a national reputation, whose attainments cannot be questioned. They claim to have found morphine in the stomach of Mrs. Buchanan, having demonstrated this to their satisfaction by the usual color tests peculiar to this alkaloid; but neither of the chemists was able to separate the morphine in its crystalline form.

The defense introduced in rebuttal to this testimony Dr. Vaughan, a well known specialist on cadaver alkaloids or ptomaines. He claimed that inasmuch as the chemical experts failed to separate the morphine in the form of crystals, and had relied entirely upon its color-reaction with tests, the presence of morphine in the stomach was by no means to be considered established; and he contended that since some ptomaines give these reactions in common with natural alkaloids, as well as morphine, it was as likely that the lady may not have died from poisoning with morphine, but from disease.

The inference is that identical color reactions are sometimes obtained from ptomaines, resembling those obtained from morphine, when the latter alkaloid is not present. As these cadaver alkaloids are of frequent occurrence in dead bodies, even as soon as two hours after death, it stands to reason that too much care and circumspection cannot be exercised by the analyst in forming a final conclusion and to guard against every possible source of error. As to the processes used for the extraction and isolation of alkaloids from organic liquids, the systematic methods of Dragendorff have so far been superseded by better methods; and when this mode of procedure, which separates different alkaloids according to their solubility or insolubility in the different solvents, has been conducted with care, and the products subjected to appropriate color tests, the result should be regarded as conclusive.

While it is true that amylic alcohol has been heretofore regarded *par excellence* as the solvent for morphine, it is now found to be an equally good solvent for a number of cadaver alkaloids. It is therefore not to be wondered at that the distinction between morphine and these ptomaines is now brought to narrow limits, and it would seem that medical jurists are justified in demanding that nothing but crystallized products be accepted as conclusive evidence. But on the other hand, although many of the ptomaines have been obtained in the crystalline form, an equally large number crystallize with difficulty or not at all; and when it is considered the crystallographic forms of those ptomaines that assume crystalline forms have not been studied or determined, then even a crystalline product has no other advantage save that of a probable high state of purity, and the analyst is still compelled to rely upon the color reactions.

Of cadaver alkaloids by far the greater number have been discovered by Selmi. These with others have been collected and arranged by Husemann, according to their behavior toward solvents, into five groups.

1. Ptomaines which pass from acid solution over to ether. Selmi isolated the alkaloids of this group from the cadaver only. Their behavior toward tannic acid, iodo-iodide of potassium and auric chloride is similar to that of the natural vegetable alkaloids; mercuric chloride gave no precipitate.

On evaporating two or three drops of the aqueous solution, the addition of three drops of muriatic acid and one drop of sulphuric acid produced, on warming, a beautiful violet color. Nitric acid colors it yellow. Ptomaines of this class may be mistaken for digitalin, which is also taken up by ether from acid solutions. But, according to Selmi, no ptomaine which passes from acid solutions over to ether will give the known reaction which digitalin gives with bromine and sulphuric acid.

2. Ptomaines which pass from alkaline solutions over to ether. According to Selmi, the ptomaines belonging to this group have the property of giving various color reactions and they form crystalline products.

When subjected to physiological tests, they generally produce a short dilation of the pupil, and as a rule a diminution of the frequency of respiration. Most of these ptomaines reduce iodic acid like morphine, give with phosphomolybdic acid at first a violet and later on a blue color-reaction.

They reduce auric chloride and potassium dichromate with sulphuric acid, and most of these ptomaines are not precipitated by platinic chloride. To this group belong the greater number of cadaver alkaloids.

3. Ptomaines not soluble in ether but soluble in chloroform, as obtained from alkaline solutions. Selmi described the bases of this group as possessing a strong alkaline reaction, having a pungent, more or less bitter taste, and readily passing into a state of decomposition on the evaporation of their chloroformic solution, even at a low temperature, the residue losing a part of its solubility in chloroform. In common all of the bases of this group reduce iodic acid and frequently form with iodo-iodide of potassium crystalline products. Also sulphuric acid, and Froehde's test a red color.

4. Ptomaines insoluble in ether and in chloroform. They readily pass from alkaline solution over to amylic alcohol. Of these bases Selmi has observed several, one not poisonous, the others poisonous. He mentions an instance where he obtained a ptomaine which formed with hydriodic acid long needle-shaped crystals. Another illustration is given by Felesar, who, in the judicial investigation of a cadaver, isolated a base with amylic alcohol which did not reduce iodic acid and gave no color reaction with the usual tests, thus making a mistake with organic plant-bases an impossibility.

5. Ptomaines which are not extracted either by ether, chloroform, or amylic alcohol. This circumstance led Selmi to the discovery of bases which he found to be very soluble in water and almost tasteless. They give with sulphuric acid no color-reaction, and are not precipitated by mercuric chloride, auric chloride, or hydriodic acid. In reviewing these groupings of the cadaver alkaloids arranged from the researches of Selmi in connection with the query if amylic alcohol is a proper solvent for the isolation of morphine, we shall find that inasmuch as morphine is not extracted by ether and chloroform from

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* Read at the semi-annual meeting of the California Pharmaceutical Society, San Francisco, May, 1893, by Prof. W. T. Wenzell, Ph.G., M.D., Ph.M., California College of Pharmacy.

acid and alkaline solution, that therefore this alkaloid is excluded from the first, second, and third group.

Amylic alcohol removes morphine from alkaline solutions after the action of ether and chloroform, and it may therefore be referred to group four. It seems that there are comparatively few only of ptomaine bases belonging to this group, and these do not possess many of the reactions belonging to morphine, and are frequently entirely absent. The color reactions for morphine are many and well established, and the writer is confident that no cadaver alkaloid will give all the reactions belonging to morphine as stated below:

1. Morphine dissolves in cold concentrated sulphuric acid, forming a colorless solution, which after standing several hours turns pink on the addition of a trace of nitric acid.
2. A mixture of one part morphine and four parts of cane sugar added to concentrated sulphuric acid gives a dark-red color, which is intensified by a drop of bromine water.
3. A fragment of iodic acid added to a strong solution of a morphine salt, is decomposed with liberation of iodine which imparts a violet color to chloroform when shaking the latter with this mixture.
4. A strong neutral solution of ferric chloride causes a blue color with morphine; the color is changed to green by an excess of the reagent.
5. Neutral solutions of morphine produce yellow precipitates with chloride of gold or platinum, with potassium chromate and dichromate, but not with mercuric chloride.
6. Froehde's reagent (a fresh prepared solution of sodium molybdate, one milligramme in each c. c. of concentrated sulphuric acid) produces with morphine a magnificent violet color, changing to green.

In conclusion it may well be emphasized that analytical chemistry has always shown itself equal to the emergency, so that when tests and processes regarded as infallible prove doubtful, other tests and processes are discovered either to corroborate or correct. The recent introduction of acetic ether for the separation of alkaloids in forensic analysis, will no doubt prove an aid in the premises.—*American Druggist and Pharmaceutical Record*, July 13, 1893.

PARAFFINE IN EAR DISEASE.—Delstanch says that in certain diseases of the middle ear liquid paraffine should be dropped into the ear; in adhesive inflammation it takes the place of all other remedies. In chronic catarrh of the middle ear it can sometimes be substituted for paracentesis of the tympanum, or it can modify this operation when circumstances render it unavoidable. It decreases the secretion and increases the sharpness of hearing. At the beginning of an acute otitis media the dropping of the paraffinum liquidum into the ear removes the pain and brings recovery in from five to six days.—*La Sem. Med.*, November, 1892.*

THE NATIONAL CONVENTION.—The American Pharmaceutical Association will hold its forty-first annual meeting in Memorial Art Palace, Chicago, August 14th next, one week before the meeting of the Seventh International Pharmaceutical Congress, the latter meeting being the first ever held in America. Matters of deep interest to pharmacy will doubtless be considered at both meetings, and a full attendance of pharmacists is expected.

GEORGIA DRUGGISTS.—The Georgia State Board of Pharmacy will meet in Rome, August 9th, to examine applicants for druggists' license. After the examination the Board will meet with the Georgia Pharmaceutical Association, and both expect to go in a body to attend the meeting of the American Pharmaceutical Association in Chicago. Those who intend coming up for examination should notify the Secretary, Dr. Henry R. Slack, La Grange, Ga.

THE Minnesota State Pharmaceutical Association, which met at Lake Minnetonka, June 13th and 14th, elected J. E. Stiles, of St. Louis Park, as President for the ensuing year; the other officers chosen were: Secretary, C. T. Heller, St. Paul; First Vice-President. C. T. Rohde, Waterville; Second Vice-President, L. Trautmann, Wabasha; Third Vice-President, John M. Gayner, Grove City. The Association will meet again at Lake Minnetonka the second Tuesday in June, 1894.

THE CENSORSHIP OF DRUGS IN THE NETHERLANDS.—The Government report for 1890 on the conduct and condition of the different pharmacy shops (drug stores) in the Netherlands, shows that from eighty dispensing physicians and from eighteen apothecaries the medicines were found to be in an unsatisfactory condition; that sixteen physicians and only three apothecaries were reprimanded for the poor quality of their drugs. Holland has 755 dispensing physicians and 581 apothecary shops.—*Pharm. Weekblad.*

FIRE IN SCHERING'S CHEMICAL WORKS.—On the evening of June 6th, fire broke out in the above-named works, Berlin, starting, from some unexplained reason, in a drying-room on the second floor of one of the buildings. Owing to the system adopted of separating the works into sections by fire-proof walls, the fire was quite a local one, and was got under in a few minutes. No noteworthy hindrance to the work will be occasioned by the accident, nor were any valuable goods destroyed.—*Chemist and Druggist*, June 17, 1893.

*** Parke, Davis & Co. advertise a refined, non-irritating petroleum product for use as an inhalant and as a base for other medicaments, which would no doubt exercise a curative effect in the same manner as does liquid paraffine.—ED.**

Section on Materia Medica and Pharmacology, Pan-American Medical Congress.—A Section on Materia Medica and Pharmacology has been organized under the executive presidency of Prof. Joseph P. Remington, of Longport, N. J., with Prof. F. G. Ryan, 3739 Brown street, Philadelphia, as English-speaking secretary. This Section promises to be one of the most important of the entire Congress. Delegates have been invited from all the pharmaceutical societies and colleges in all the Americas. Those contemplating attendance are invited to prepare papers on pharmaceutical topics. Titles should be sent at once to Prof. Ryan, Secretary.

The Pharmacists of Nice have started a mild agitation against the Public Dispensary in that town. They consider that the latter forms an important competition to the legitimate trade, and they assert that medicines are made up by unqualified men. The dispensary is open from 6 A.M. to 6 P.M. only, besides being closed entirely on Sundays, consequently the poorer classes are unable to obtain medicaments during ninety-six hours each week. It is proposed that all pharmacists shall dispense prescriptions for outdoor-relief patients at a fixed low tariff. The local press has interested itself in the matter and supports the trade.—*Chemist and Druggist*, June 17, 1893.

Pill-coating.—M. Fauël communicates the following method for pill-coating to the *Pharm. Weekblad:*

The pills are uniformly moistened with a liquid composed of one part of glycerin and two parts of strong alcohol; they are then rolled in a sufficient quantity of impalpable powder, composed of saccharin 4 parts, gum tragacanth 2 parts, and potato starch 1 part. Remove the excess of powder by means of a sieve, and repeat the operation. To have the pills white, they are then moistened with glycerin 1 part, ether 2 parts, and rolled in a powder composed of equal parts of talc and carbonate of calcium. The following are the author's formulas for cacao and gelatin coating respectively: (1) Cacao 2 parts, saccharin 2 parts, and gum tragacanth 1 part; (2) Gelatin 11 parts, saccharin 5 parts, distilled water 24 parts.

Laws Against Adulteration.—The past year or two, especially during recent months, numerous "pure food and drug" bills, etc., have been proposed for national or State enactment. Most or all of them have failed of passage. This defeat is due, in large measure, to the antagonism of manufacturers and wholesalers in the line of products affected. That they are thus antagonistic to the measures does not necessarily mean that they are from choice dishonest or desirous of dealing in inferior goods, but because they believe they must compete with that very considerable class of manufacturers who have no scruples on that score. Then, too, it cannot be gainsaid that there is a demand from the people for a cheap line, and, to meet their views on price, deterioration of quality is essential. There would seem little use in attempting State legislation, but a national enactment rigorously enforced is feasible and advisable.—*American Analyst.*

Illinois College of Pharmacy, Chicago.—The School of Pharmacy of Northwestern University announces that it is now ready to give a two years' course for the degree of Pharmaceutical Chemist, with the same requirements for admission and graduation as have been established by Michigan University. At the same time, the course heretofore offered for the degree of Graduate in Pharmacy will be continued, requiring attendance upon one junior course and one senior course, each of about twenty weeks, and with the same requirements as to age and practical experience in the drug business as in other colleges of pharmacy.

Next term begins on the 1st of September, and the prospects are that the class will be larger than ever before, which may be attributed, partly, to the new building in which the school has six magnificent laboratories.

Official Delegates to, and Guests of, the Pan-American Medical Congress.—Practically all of the Governments have appointed official delegates to the Congress in response to the invitation by the President of the United States. The United States Government will be represented by six delegates. The larger cities of all the Latin-American countries have appointed delegates to participate in the proceedings of the Sections on Hygiene, Climatology, and Demography, and on Marine Hygiene and Quarantine, and similar appointments will be made by the cities of the United States. Seventy-six similar delegates have so far been appointed by the Governors of States in the United States. A large number of delegates have been chosen by the medical colleges of the United States and other American countries to attend the Section on Medical Pedagogics, under the presidency of Prof. J. Collins Warren, of Boston.

Dr. Ernest Hart, editor of the *British Medical Journal*, and Prof. Dr. Czerny, of Heidelberg, will be among the distinguished guests of the Pan-American Medical Congress. The latter is booked for the Pan-American excursion to Rome by the "Werra."

An Enterprising Pharmacist of a town near Paris has hit upon an ingenious idea for extending his trade by developing the system of enlisting the services of the medical profession. He has issued a circular which reads as follows: "The cost of advertising my special products, pills, cosmetics, perfumes, etc., entails an outlay of 100,000*f.* per year, and the sale is not enormous. On this account I propose interesting doctors in my goods, feeling certain that the result will be more efficacious." Then, reflecting that even if he only has a thousand adherents to his scheme the profit of 100*f.* to each would be very small, he proposes to start a lottery. Those, amongst the 16,000 practitioners in France, who will engage to prescribe the products of the *pharmacien* in question to the exclusion of all others, will have their names inscribed in order, and a ticket for the lottery will be sent to them. The circular goes on: "At the expiration of each year a drawing will be held under the control of a committee of doctors, and ten numbers will be taken—the first will have 50,000*f.*, the second 10,000*f.*, and the eight others 5,000*f.* each." French doctors are not indifferent to the shekels, but it remains to be seen if their professional dignity is compatible with a scheme of this kind.—*Chemist and Druggist*, June 17, 1893.

PHARMACEUTICAL CONVENTION.—The pharmacists of North Carolina will hold their fourteenth annual meeting on August 9th and 10th at Greensboro. Winston had been chosen as the place of meeting, but on account of a fire which destroyed the Zinzendorf Hotel in that city the change of location for the convention was made by the local committee. All who have papers to read, and have not yet given notice of the same, should inform Mr. Augustus Bradley, chairman of the Committee on Papers and Queries, at Henderson, giving title of the proposed contribution. Every registered pharmacist in North Carolina is invited to unite in membership with the Association and be present at the Greensboro meeting. Reduced rates of travel and accommodation have been secured.

The Board of Pharmacy will be in session at the same time and place. Applicants for honors at the hands of this Board should communicate with its Secretary, Wm. Simpson, Raleigh.

All members of the Association, whether delegates or not, are invited to rally at Greensboro for a united raid on Chicago to capture the A. P. A. and the Fair. An effort will be made to secure the next convention of the American Association for Asheville, N. C.

Neat invitations for the State meeting have been issued by the Secretary, F. W. Hancock, Oxford.

THE LYCOPODIUM SEASON.—Lycopodium has been selling in New York for the past two months at prices materially above those which prevailed during the greater part of 1892. In fact, this appreciation in values really set in last fall, when the requirements incidental to the Presidential campaign were supplemented by a very unusual demand in connection with the Columbian celebrations at that time. It is true that the inflated quotations of that period soon gave way to easier prices, but the impetus thus given to the article is still felt. This spring the orders received for consumption have shown no variation as to volume when compared with previous records in corresponding seasons. Advices which have of late been received from Russia represent a real scarcity of goods there, and European markets generally seem to be laboring under similar disadvantages. It is undoubtedly true that, owing to a reduced yield and an exceptionally heavy consumption in 1892, the quantity of lycopodium carried over for distribution in 1893 was less than is ordinarily found at the beginning of a new year, and this accounts in a large measure for the well sustained prices which our market has recently experienced. The supplies now available are said to be very limited, and goods are now firmly held at an advance. It is further asserted that for similar reasons no considerable reinforcement of stocks may be expected in time to affect the market during the summer and fall months, and on this assumption holders look forward to a higher range of prices than those now ruling.

While there is no expectation that the coming demand will equal that of last fall, it is supposed that the regular consumption, in addition to that flowing from the World's Fair needs, will be sufficient to closely absorb all that may be offered, thus supporting what many now regard as the beginning of better prices.—*Oil, Paint ana Drug Reporter*, June 5, 1893.

ADULTERATED BORAX.—Our attention has been called to a practice which has latterly grown to be quite common—the adulteration of borax with bicarbonate of soda, and in some rare cases with other substances. It is only the powdered borax, and particularly that which is sold in packages for household use, that has been found sophisticated. In some cases as high as 60 per cent. of the contents of a package has been found to be soda, and from that down to 10 per cent. Of course the packers find it profitable to cheapen the article, but in the case of borax it will prove even a more shortsighted policy than in the case of many other articles used in the household. The use of borax for household purposes is of comparatively recent introduction and is yet by no means universal; hence when the housewife uses the adulterated stuff and does not secure the result she expects, borax will be condemned as not answering the purposes for which it has been recommended, and its sale will decrease. The profit to the packer is very tempting, it must be admitted, as powdered borax costs about eight cents per pound, while bicarbonate of soda may be purchased for less than three cents per pound; but the practice is sure, if continued, to ruin the trade in powdered borax for household use. This may prove another verification of the fable of the goose and the golden egg, unless a halt is made.—*Oil, Paint and Drug Reporter*, June 5, 1893.

THE NEW YORK COLLEGE OF PHARMACY.—If any one educational institution more than another in this country has occasion to issue a roseate prospectus, we should judge from external appearances that the New York College of Pharmacy is the one. With a record of sixty-three years' experience in the art of teaching, and a list of alumni which includes some of the foremost chemists of the age; with a faculty luminous with such names as Chandler, Elliott, Rusby, Coblentz, Oehler, Ferguson, and Harrison; and with a beautiful new six-story building, constructed according to plans which it took twelve months to perfect, and located so near to Central Park and the Hudson River that the scenery of both may be viewed from opposite windows, and within easy reach of rapid transit to the heart of the city; it is no wonder that the officers of the College consume 59 pages of pamphlet in telling about their prospects. Apart from the esthetic features of the new building—which, of course, we are all bound to admire—the announcement states that "all the laboratories have been specially arranged to give the students *practical* instruction, by making them work with their instructors and at the same moment—a system without a rival in scientific education." It will be remembered by the readers of the BULLETIN that the celebrated Canby herbarium, an account of which from the pen of Dr. Rusby appeared in our columns some time ago, is now the property of the New York College of Pharmacy. For special information not contained in the prospectus, inquiries should be addressed up to Oct. 1st to J. Niven Hegeman, Secretary, 209–213 East Twenty-third St., New York City.

The Situation of Paris Green.—The season is now at hand when the actual consumption of Paris green begins, and, as the potato-bug has now put in his appearance, activity among agricultural consumers as purchasers is daily becoming more marked. There have been periods during the year of decided briskness among the trade, which have been offset by seasons of quietude, although the average demand for the year has been larger than for several preceding ones. In some cases manufacturers have been hard pushed to fill orders, and have at times been compelled to call upon jobbers holding reserved stocks to aid them in supplying the quickened demand. This has been largely due to the small stocks carried over by manufacturers, who have not forgotten the experience of former years in manufacturing ahead in anticipation of an active demand. Consequently, when the brisk demand started, owing to the low prices prevailing and the buyers stimulated to purchase by fear of an advancing market, it found the manufacturers unprepared and necessitated brisk work to supply the sudden call.

Among dealers there are of course some who insist on taking the pessimistic view of the situation. These argue that the low prices of Paris green, which permit of only a small margin of profit, and the stringency of the money market, are not favorable signs of prosperity, and render the season's outlook gloomy. It must be admitted that these grounds are well taken, but the majority of manufacturers view the matter more hopefully.

Prices, it is true, have ruled low, but on this account many orders have been placed that otherwise would have been withheld until actual want compelled dealers to purchase. Various views are entertained as to the possibility of higher prices. Opinion prevails that it the association had more confidence it could obtain oldtime prices, and at those might expect, even at this time, a large and profitable demand.—*Oil, Paint and Drug Reporter*, June 5, 1893.

Have We a Specific for Diphtheria?—The exaggerated estimate placed upon the value of the tuberculin of Koch, which was partly due to the sensationalism of the daily press, rendered the reaction in the public mind all the greater when it was determined that after all it was not a specific for that dread disease tuberculosis.

It has been observed, however, that tuberculin is of much value as an aid in diagnosis, for when administered in doubtful cases the diarrhœa set up in one patient and the profuse menstruation induced in another indicated that in the one case the bowels and in the other the uterine appendages were the seat of a tuberculous affection.

Aside from this, the studies made on this substance have paved the way for a series of investigations which hold out great promise.

The Koch Institute for Infectious Diseases has recently issued a report on the diphtheria serum of Behring, which is on the whole favorable to the conclusion that in it we possess what is in a sense a specific for this disease. This serum is derived from diphtheria-immune sheep, and is less active when newly prepared than after keeping for some years.

Experiment having demonstrated its therapeutic value on animals, it was next tried on man, and of thirty cases of undoubted diphtheria treated twenty-four recovered, showing a death rate of 20 per cent. under this treatment as contrasted with a death rate of about 50 per cent. under the ordinary treatment. Of eleven children treated, only two died, and one of these had at the same time septicæmia and the other tuberculosis.

The serum is administered by hypodermatic injection with a Koch syringe, over the breast. By light massage 20 cubic centimeters can be so distributed under a child's skin as hardly to be noticeable.

The serum is under government control, and the restrictions which were thrown around Koch's tuberculin will probably also be laid upon this product, so that it may not be obtainable commercially for some time. In the meanwhile we must await with keen interest the further experiments which must be made before a definite answer can be given to the question: Have we a specific for diphtheria?—*American Druggist*, July 6, 1893.

The Danger from Matches.—A recent writer in one of our chemical journals raises the question whether the so-called "safety matches," which are supposed to ignite only on the boxes in which they are put up, are really as safe as they are supposed to be. As justification for his question, he cites the fact that in his office combustion took place in two packets which were allowed to fall to the floor in handling, the only cause of the ignition being the concussion attending the fall. Further demonstration showed that the matches were not by any means as absolutely safe as might be supposed from the label upon the box. It was found possible to ignite them by sharp impact against each other, which was doubtless the cause of the phenomenon when the packages were dropped; and they could also be lighted when rubbed sharply upon hard, smooth surfaces, like a sheet of paper, a pane of glass, or the like. Yet chemical analysis showed that these matches were true to their formula, in that they contained no phosphorus. There was also a peculiarity noticed in that they were more susceptible to ignition when in an extremely dry state than when the atmosphere was damp, though not excessively so.

This experience gives the text for a little discussion of a danger so common and so imminent that no apology would seem necessary for referring to it with the purpose of uttering a word of caution.

Perhaps the most dangerous of all the match species is the abomination known as the "parlor match." It is inexpressibly annoying in the disgusting trail of dirty stain which it leaves wherever a thoughtless person chances to ignite it; but that is not its greatest or most dangerous fault. Every match which happens to drop, anywhere, is a magazine of danger. Any friction, or pressure of a foot, no matter how lightly booted, will ignite the thing.

The moral is obvious; familiarity has bred contempt, and in the use of these dangerous little conveniences we have become extremely careless. It is time to turn over a new leaf. Keep matches in but a few places in the office. Let those few be fire-proof receptacles, in which the matches could burn to ashes without endangering anything. Remember that combustion cannot go on without a supply of air, and for that reason, as well as to prevent accidental scattering, the match-boxes should always be kept covered.—*American Analyst.*

The Poisoning of the Future.—In the July number of the *New Review* there is an article by Dr. S. Squire Sprigge, with the catching title used at the head of this note. Dr. Sprigge assumes that the public are alarmed lest the discoveries of science should enable the poisoners of the future to destroy their victims with less fear of detection than is at present before their eyes. Of course, no more in the future than now can science or law altogether check the straightforward murderer, as he may be called—the man who kills his wife or other enemy, with the distinct intention and expectation of swinging for it. But the poisoner is generally a more cunning criminal—he hopes and anticipates that he can accomplish his purpose secretly; and the question is discussed whether the development of our knowledge of alkaloids, ptomaines, and disease germs is going to help him in these designs. Dr. Sprigge comes to the confident conclusion that there is nothing to fear. His argument may be summed up briefly in the statement that, so long as criminals are in an infinitesimal minority their evilly-applied science will never be able to cope with the means which the more righteous possessors of the same science will always have at their command to thwart them. This is, no doubt, sound logic as far as it goes, but its weak point is that neither Dr. Sprigge nor anybody else knows how many undetected poisonings there may have been. Dr. Sprigge quotes at length the Lamson case, and shows how the cunning medical poisoner was foiled. Good; but who is to say that Lamson, Neill, Palmer, and other medical men whose names figure in the Newgate Calendar are the only ones who have used their opportunities and their knowledge to base purposes? Dr. Sprigge also too readily assumes that it was the scientific evidence which convicted the poisoners we have named. We venture to maintain that neither Lamson nor Neill would have been hanged without the evidence of the purchase of the poisons they used which the Pharmacy Act ensured. We agree with Dr. Sprigge that the danger of poisoning will not be greater in the future than it is now, but we are inclined to the opinion that the risks of accidents are and will be much greater than those from criminals, and unless our present system of permitting the prescriber to also compound, and perhaps administer, the medicine, and sign the death-certificate, be altered, we do not see how the most serious of these chances is to be prevented.—*Chemist and Druggist,* July 8, 1893.

Trade Supplement.

The Bulletin *invites its advertisers and subscribers, and all connected with the drug trade, to send items of information, for these columns, concerning all new departures, products, and facts regarding the general and special trade interests of druggists.*

Elixir Six Iodides (Walker-Green's) has been subjected to an extended trial in syphilis, and has been found most efficient. In aggravated cases the cure is hastened by the hypodermatic injection into the buttocks, twice a week, of one-twentieth of a grain of corrosive sublimate.

Scaly eczema is most submissive to this remedy when administered in sufficient quantities. The cure is expedited by the local application of:

℞	Acid borici	ʒ iij.
	Bals. Peruviana	gtts. xv.
	Vaselini	℥ ij.

Ft. ung.

⁂

ILLINOIS.

Spring & Sielschott have just fitted up the nicest store that Beardstown has seen for many a long day.

J. J. Wolfe is one of the wide-awake druggists of Peoria. "Herr" Wolfe is an old knight of the grip.

C. F. Rickey & Co.'s store at Mt. Sterling is finished in oak. It is one of the handsomest little stores on that line of road.

Chas. Strachman now occupies J. S. Bell's old corner in Peoria. He has refitted it throughout and is doing a nice business.

Ed Granacher, J. O. Christie's best man, holds the enviable reputation of being the best drug clerk in the city of Quincy. And this is no mean compliment.

Springfield:

That matrimony is contagious has been illustrated in Bauman Bros.' store. First, Ed got married; his chief clerk, Chas. Zaphf, soon followed suit; and now Charlie, the junior in the firm, is contemplating the same thing.

In the relay race starting here and ending at Frankfort, Ky., and Madison, Wis., Chas. Bauman had charge so far as Decatur.

Chester Bolles has had a novel display in his show window of late—a litter of fine English pugs. They attracted a large crowd.

One of our young M.D.'s is rapidly gaining an enviable reputation as a (phizz)ician—"so(da) say."

Lately a man came into a drug store and asked for "yellow tea." It took a long-headed clerk to know that he wanted "gelatine."

John Chenowith, who has been with Chas. Ryan, has left for his home near Chicago. He resigned, owing to ill-health.

Henry Schneider, now with Chas. Ryan, will take the course at the Chicago College of Pharmacy, beginning this fall.

⁂

INDIANA.

Ed Smith, of the firm of Smith & Wilson, New Castle, is aspiring to be postmaster at that place. We wish him success.

Finney & Helm is the style of a new drug firm at Rushville. Their store is brand new in every respect. Mr. Finney is an experienced and practical druggist, and the boys have a bright prospect before them.

Geo. H. Andrews, the prominent druggist, of Muncie, has just returned from a two weeks' visit at the World's Fair. George reports a splendid time, and brings back with him that same genial smile which welcomes everybody.

There was quite an interesting game of base ball at Fort Wayne the other day, by the "Pill Peddlers" *vs.* "Pencil Pushers." Of course the Pill Peddlers won. The score stood 23 to 12. Dr. W. O. Gross, of the firm of Gross & Pellens, druggists, displayed some very scientific running, "sliding," etc.

⁂

MINNESOTA.

Fred. W. Foot, of Minneapolis, has accepted a position with W. H. Stevens & Co., of Faribault.

Frank W. Finch, of Hastings, has been taking in the sights at the Fair for the past few weeks.

G. H. Goodrich, of Goodrich & Jennings, Anoka, is visiting friends in the East, and will "do" Chicago and the Fair on his return.

Harry E. Harter, of Minneapolis, has made his second trip to Chicago and the Fair this season, and feels well posted on the village by the lake and its big show.

Wilson Brothers, Minneapolis, have moved into their new store, corner of Twentieth avenue north and Fifteenth street, and are now located in one of the finest stores in the north end.

H. W. Dickman, St. Paul, for some time at J. W. Sprague's pharmacy, corner University and Rice streets, has purchased the J. W. Bowden store at 969 Farquier, corner East Seventh street.

Conger Bros., St. Paul, have their Selby-avenue store in good running order now. This makes them a trio of the best located outside stores in the city—497 Laurel, 349 University, and 680 Selby avenue.

Lewis F. Entrup, in charge of A. J. Eckstin's pharmacy at New Ulm, was recently called to his old home at Shakopee, to attend the funeral of his brother, Dr. C. A. Entrup, a prominent physician of Southern Minnesota.

J. A. Batto, St. Paul, formerly located at the corner of Bates avenue and Third street, has purchased the Van Dyne store, corner of Beech street and East Seventh, and has painted, papered, and remodeled the same, making it as neat a little place of business as any of its rivals at the east end.

E. L. Newell & Co. met with almost a total loss of their stock by fire at La Prairie. The small amount of fixtures, shelf-ware, and goods that were saved, Mr. Newell has moved to Excelsior, Lake Minnetonka, and they will be placed in his store at that place, which was Mr. Newell's main place of business.

Sixteen thousand pounds is a good deal of giant powder to have exploded at one time, and especially is it disastrous if near a drug store. At Virginia City, up in the northern part of the State, in the iron country, such an explosion recently occurred. The concussion blew in the front of the "Bank of Virginia City" building, which is next to W. B. Mitchell's drug store, knocked Mr. Mitchell into insensibility, badly bruising him, and damaged his store and stock, which it will take some time to repair. The explosion was caused by a clearing fire on an adjoining mining property getting too near the magazine of the "Hecla Powder Co."

⁂

NEW YORK.

J. C. Von Schaak, of Chicago, has moved to New York City, where he expects to engage in business and make his home.

Brooklyn:

Egon Wernicke, who has recently been employed by Winter's drug store, and who was formerly at the old Otto Gillig store, 197 Bedford avenue, has reopened the latter pharmacy under his name. Although he is in the centre of a nest of drug stores, it is felt that his will prove considerably more than a venture.

Anthony Papauschek, successor to Wm. Muller, 104 Manhattan avenue, Greenpoint, has greatly added to the beauty and efficiency of his store, and is now enjoying the confidence of the laity and the profession in his section.

⁂

TEXAS.

On the morning of July 1st, H. W. Williams & Co., wholesale druggists, Fort Worth, had an explosion which resulted quite seriously to R. N. McKnight, the general manager and correspondent. The gas had been left burning in the vault the night before, and became extinguished for want of oxygen. On opening the door next morning and striking a match to light the vault, the accumulated gas exploded, enveloping Mr. McKnight in flames. While he was very badly burned about the face, neck, and hands, he made a fortunate escape, as the permanent effect will only be a few scars, and he was able to resume work in a few days.

Tschirch

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INDEX OF CONTENTS.

Editorial. PAGE
W. O. A. Tschirch 337
Dr. David Dyche 339
American Pharmaceutical Association—Forty-first Annual Meeting 341
Pan-American Medical Congress 341

Original Articles.
PRACTICAL PHARMACY.
Marble Dust. By Thomas Warwick 341
Notes on Some Animal Oils and Fats Used in Pharmacy. By P. L. Simmonds, F.L.S 344
An Act to Regulate the Practice of Pharmacy and the Sale of Poison in the State of California 345
CHEMISTRY.
A Problem in Glass-making. By Dr. Otto Witt 348
BOTANY AND MATERIA MEDICA.
A Collective Study of Cocillaha—(Guarea-Sp.). By H. H. Rusby, M. D., Reynold Webb Wilcox, M. A., M. D., LL. D., and Virgil Coblentz, A. M., Ph. G., Ph. D. 350
Answers to Correspondents 359
Adonite 359

Nut Cracking 359

Correspondence.
American Pharmaceutical Association 360
London Letter 371
Berlin Letter 373
New York Letter 375
Imports of Drugs, etc., at the Port of New York, for the Month of July, 1893 376

Facetiæ 377
Abstracts and Translations 378
Pharmaceutical Progress 380
Notes and News 383
Trade Supplement 384

W. O. A. TSCHIRCH.*

Prof. Dr. Wilhelm Oswald Alexander Tschirch was born Oct. 17, 1856, in Gieben (Prussia); entered upon a pharmaceutical career in 1872; and obtained the degree of Doctor of Philosophy in 1881, on a dissertation "Ueber die Beziehungen des anatomischen Baues der Assimilationsorgane zu Klima and Standort," published in *Linnæa*, t. ix, 1881, with plate.

Prof. Tschirch devoted his energies to strictly botanical studies previous to his pharmacognostical work, and later served a term as assistant in the chemical laboratory of the late Public Analyst, Dr. Ziurek, in Berlin. From here he returned to botany, and worked under Prof. Pringsheim.

In 1885 he was appointed lecturer in the Friedrich-Wilhelms University, and soon afterwards to a like position in the Berlin Agricultural College.

On Prof. Flückiger's invitation he undertook to cooperate with the latter in revising and enlarging in a new edition the "Grundlage der Pharmacognosie." This has since been translated from the German by Prof. F. B. Power.

Tschirch is an active worker. Evidence of this may be found in Beckurts' *Jahresbericht der Pharmacie*, in the *Archiv der Pharmacie*, in the *Real Encyclopedia der Pharmacie*, etc. He is an enthusiast. Who among us has forgotten how last year he touched the sympathies of the pharmaceutical world in his successful appeal for a Flückiger album? We do not find Tschirch weeping and whining over a lost cause. Instead of vainly lamenting the "deterioration of pharmacy," he establishes in Berlin the *Pharmaceutische Gesellschaft*, whose excellent

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* For some of the following facts concerning Prof. Tschirch, the writer is indebted to Reber's valuable "Galerie d'eminents Therapeutistes et Pharmacognostes," Geneva.

"Berichte" are now in their third year; or he erects in Bern a pharmaceutical institute, with separate laboratories for chemical, microscopical, and pharmaceutical work. He knows very well that in the art of medicine the apothecary occupies a field peculiarly his own—that he has a function to perform that cannot be delegated to anyone else; he it is who invents, experiments, discovers, and introduces to the medical profession improved forms of medication—searching in masses of inert or injurious material for the active principles upon which the physician depends for his success. Tschirch shows none of the gloomy, unprofitable, fault-finding spirit which sees in the transitions of pharmacy perpetual occasion for discouragement; but he has a cheerful appreciation of the venerable maxim of Father Hippocrates, "*Ars longa, vita brevis, occasio preceps.*"

Inasmuch as Tschirch's zeal for the professional standing of the pharmacist has been deprecated of late, it may be profitable to call to mind a few facts in his support:

The medicinal value of radix Sarsaparilla is seriously doubted. The constituents of bulbi Scillæ are far from being clearly understood. Assays of rad. Ipecacuanha are of very little value, since we do not know what emetine is. Rhizome Veratri might be a valuable drug, but we are in the dark about its active principles; the same might be said of Secale Cornutum—of Cornutin we hear little. What constitutes the medicinal value of oleoresin Male Fern, has yet to be learned—is it a volatile principle? All the balsams, many fatty and a majority of ethereal oils are used blindly, so to speak. A distinct medicinal value is attributed to *Cereus grandiflorus*, to Cotton-root bark, to Blackberry root, to Jamaica dogwood—for what pharmacognostic reasons we have yet to learn. Of "Lobelia" we read that the fresh plant only seems to have medicinal value. Cortex Simarubæ is much valued in countries where dysentery is endemic; in the United States it is neglected. The culture of medicinal plants, so successfully carried on elsewhere, is unknown here. Extractum Pumicæ granati is said to be only efficacious when made in East India. Hæmol and Hæmagallol may revolutionize the whole army of iron preparations; it is high time to have more experiments. Java Coca leaves do not seem to contain much cocaine, notwithshanding their reputation as being exceptionally rich in alkaloid. It is far from fully explained that chloroform, so universally used, is the best medium for extraction of alkaloids: Berberine combines with chloroform to a colorless crystalline compound; Brucine seems to combine too with chloroform; assays of Nux Vomica preparations vary largely among different analysts.* In Carpaine we have a true alkaloid, that may with infinite advantage replace the glucosides obtained from digitalis, as the latter are from their very nature easily split up and always attended with uncertainty in dispensing. *Experiments with carpaine* (galenical preparations) *are wanted.*

And in view of all these facts, we should listen to jeremiads on the decline and fall of the position of the apothecary?

Tschirch is an ideal conversationalist. The intellectual pleasure derived from his "Pharmaceutische Reiseplauderein" is fresh in the writer's memory, and enjoyed so much the better because I, too, have dreamed under those palms of a perpetual summer—have been under the magnetic influence of the emerald belt which the Malayan Archipelago wraps around the equator, and have breathed its perfume-laden atmosphere. I refer the reader to the *Pharm. Zeitung* of 1889, October number.

Since 1888, Tschirch has published, with the co-operation of Prof. A. B. Frank, maps, in folio form, representing botanical physiological subjects. Of these maps fifty have already been published.

In 1890, having been nominated Professor of Pharmacognosy and of Pharmaceutical and Toxicological Chemistry, Tschirch moved to Bern, Switzerland.

In 1892, as the result of a commission received from the Royal Academy of Science of Berlin, to study, *in loco*, Indian drugs, spices, and other useful plants, to collect reliable information on the spot, and to obtain photographs or drawings of the habitats of the plants and of local scenery, Prof. Tschirch published "Indische Heil und Nutzpflanzen und deren Cultur," with 128 illustrations, after photographs and drawings, mostly by the author (Berlin, 1892. R. Gaertner). This work he dedicated to F. A. Flückiger. Its 128 illustrations are of full-page size, and make up half the bulk of the volume. From so rich a harvest it is not easy to select a few examples for special mention. They give total impressions, omitting details, of Dutch cinchona plantations; of a succirubra nursery; of a cinchona succirubra Pav. tree, standing alone in all its grandeur at the entrance of a lawn leading to a government plantation in Lembang; of a specimen of the same cinchona, peeled in small strips, to show the gathering of the bark without destroying the tree. There are drawings of *Tamarindus indica; Theobroma cacao*, fruit-bearing; how sago is made; a large *Strychnos Nux Vomica* tree; a large *Caryophyllus aromaticus* tree (the mother plant of cloves); how cinnamon bark is gathered; tea plantations; nutmeg trees, etc.

A very interesting picture in his book is the one where my lamented friend Moens, too early lost to pharmacy, sits at the foot of a tree of the Ledgeriana variety of cinchona, which owes its reputation, as the richest alkaloid producer, to the care, the skill, the superior knowledge of the late J. C. Bernelot Moens. At the

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*0.100 gramme Brucine yielded me, using chloroform for extraction, 0.1015 gramme—in accordance with the experience of Messrs. Nichols and Norton, recorded in the *Journal of Analytical and Applied Chemistry* for 1892, page 172.

last sale of Peruvian bark in Amsterdam we noticed an offer of Ledgeriana's with 13.5 per cent. total alkaloid.

We observe that the author does not give us any illustrations of English cinchona plantations.

The *Pharmaceutische Post* of July 2, 1893, publishes a lecture given by Prof. Tschirch in the University of Bern, Switzerland, Nov. 10, 1892. It is written in true French style, vivacious, tasteful, overflowing with good hits, everywhere showing a mind keenly alive to human affairs as well as to abstract learning; it is equal to the best we have been accustomed to read in the International Scientific Series, an eloquent discourse wherein humor and science are brilliantly blended together on the subject of "Photography in the Service of Arts and Sciences."

In 1893 we meet Tschirch as a writer on a very interesting subject in toxicological territory: "Das Kupfer vom Standpunkte d. Gerichtl. Chemie, Toxicologie u. Hygiene, m. Besonderer Berucksichtigung d. Reverdissage d. Conserven u. d. Kupferung d. Weins u. d. Kartoffeln" (Stuttgart: Ferdinand Enke, 1893, 138 pages).

The author divides his subject into:

1. The presence of copper in our food.
2. Absorption of copper by plant and animal.
3. Artificial addition of copper to our food.
4. Copper salts against vegetable parasites.
5. Copper utensils.

The vexed question: Is copper a poison? the author answers in the negative, from observations on man and animals, as Mayrhofer and Lehmann had done before him. Copper in minimal quantities is widely dispersed in the animal and vegetable kingdoms. It is well for pharmacists to keep in mind, when they are criticised on account of the presence of traces of copper in their "extracts,"* that potatoes, beans, wheat, fruit, vegetables, and meat, generally contain copper; and that 0.025 gramme copper in a kilogramme of pickles, for example, is perfectly harmless. Reluctantly I refrain from discussing here Tschirch's toxicological theses in this book, of which some seem to be taken at great risk, very independent of common routine work—the allowance of copper sulphate in bread, of copper in condiments, etc.

In a later book review these views may be discussed.

May Tschirch's brilliant accomplishments and noble example produce for pharmacy a bountiful harvest!

J. B. NAGELVOORT.

Pharm.-Chem. Laboratory of Parke, Davis & Co.
Detroit, August, 1893.

DR. DAVID DYCHE.

Dr. David R. Dyche, a leading Chicago druggist, one of the oldest and best-known residents of Evanston, passed away at his home, corner of Sheridan road and Chicago avenue, on August 4th, after thirty hours of unconsciousness.

The deceased was born on March 11, 1827, near Lebanon, Warren County, Ohio, where his father and uncle had farms. When he was but 14 years of age his father died, leaving him the eldest of the family. His mother was a woman of remarkable energy, and through her efforts her children were educated and the Doctor's brother sent to college. The deceased always had a taste for medicine, and at 25 he attended the Ohio Medical College in Cincinnati, graduating there with high honors in 1852 and becoming an interne at the hospital there. Later he practiced medicine at Monroe, Butler County, Ohio, where at the age of 30, in 1856, he was married. His brother George had gone to Chicago and opened a drug store, and in 1864, learning that this brother was ill, the Doctor went there and located. He associated himself in the practice of medicine with Dr. R. M. Bogue, a brother of George M. Bogue, who was a fine surgeon, and who was stricken blind some years ago with an affliction similar to that which caused Dr. Dyche's death. In 1866 Dr. Dyche's brother died, and the latter, who had been assisting him in the drug business, assumed charge of the store for the purpose of closing out the business, but he finally abandoned the active practice of medicine to give his whole attention to drugs. This step was always regretted by his intimate friends, all of whom felt sure that he would have been a wonderfully successful physician.

For many, many years Dr. Dyche's name has been a landmark at the northwest corner of State and Randolph streets, and his drug store there has been one of the most successful in the city. He leaves a widow and two sons—William A. Dyche, who was associated with him in the drug business, and who is regarded as one of the most valued members of Evanston's City Council, and a younger son, George Dyche, who graduated from the Northwestern University at Evanston last June, and who has just begun the study of medicine. When his elder son entered the Northwestern University the Doctor moved with his family to Evanston, occupying a house on Chicago avenue, near Davis street. A year or so ago they entered their present new home, which is one of the most beautifully located in this beautiful suburb.

Dr. Dyche was a great student and reader. With his sons, of whom he was very proud, he read Latin and Greek through their college courses, and aided them considerably in the study of higher mathematics, of which he had a thorough knowledge. During the last fifteen years he mastered the German language himself, and could read Schiller and the other German writers, as well

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*See "The Presence of Copper in Some Galenical Preparations," by F. W. Haussmann, Ph. G., *American Journal of Pharmacy*, January, 1892.

as the German newspapers. It was this love of study and research that would have made him a master in the practice of medicine had he continued it. Deceased became closely identified with all public movements in Evanston as soon as he took up his residence there, and to his untiring energy this suburb owes many fine institutions and notable improvements.

In 1881 he was made a member of the Board of Trustees of Northwestern University, and was one at the time of his death, giving much of his valuable time in the service of the institution. He was the real founder of the School of Pharmacy of the University, now successfully established in Chicago, and also of the Wesley Hospital. He had always been a friend and aid of the Chicago Medical College, which is a department of the Northwestern University.

The First Methodist Church of Evanston had always counted him among its stanchest pillars, and he established the Emanuel Methodist Church and materially aided the Halsted-street Mission for years. In the words of his old friend, H. H. C. Miller, of Evanston: "Dr. Dyche will be remembered in connection with every public movement for the good of Evanston during the last fifteen years, and I do not know a man whose death would be so universally regretted. Every man, woman, and child in Evanston knew him from his connection with the public schools and public works, and they all loved him. He was the most unselfish man I ever knew."

Besides his work at Evanston, Dr. Dyche was a leader in the Pharmaceutical Association of Chicago, in the Illinois State Pharmaceutical Association, and in the American Pharmaceutical Association, and he had raised several hundred dollars for the entertainment of the delegates to the approaching convention of pharmacists to be held in Chicago, being one of the committee to arrange for their reception. Some years ago he organized the Evanston Citizens' League for the suppression of the illegal sale of liquor in that suburb. He was not a third-party Prohibitionist, but he believed in the strict enforcement of the laws, and being such a friend of the Northwestern University he felt that the "four-mile limit," so called, should be kept sacred. He was made president of the League, and H. H. C. Miller was its attorney.

Through the personal efforts of Dr. Dyche, coupled with his indomitable energy, scores of illegal sellers of liquor were arrested, convicted, and sentenced. He went into court himself and prosecuted the men, and he was very successful in obtaining convictions. But, to show his kind heart, he knew these men had no money to pay fines, and when he learned that they had to go to jail his heart would soften and he would interest himself in the suspension of these fines, especially if the wives of the men would appeal to him. And the law-breakers themselves were his friends. They liked the good fight he made, and knew he was in earnest, and they would often consult him. One man who was buried under indictments secured by him would always meet him pleasantly.

Personally Dr. Dyche was a peculiar man, absent-minded at times, but he was as gentle as a woman, unselfishness itself, and beloved by all who knew him. His was a familiar figure to the thousands who visited his store, and they all liked to see his keen, kindly eyes sparkling upon them in pleasant recognition through his glasses. Often during the last three months whole families from the rural districts would appropriate his chairs and calmly eat their lunches in the store, but he would never allow them to be driven out. He would stop work at his desk at any time to dress a cut hand or remove a cinder from the eye of a sufferer, and many will testify to his kindness of heart and hospitality. He was a man of wonderful activity for one of his years, energetic as a boy of 20, and a tireless worker.

Purity in all things was one of his hobbies—adulteration in anything his horror. Pure drugs he insisted upon having, and competent men to compound them. His was one of the largest prescription trades in the city, and many eminent physicians were his warm friends, among them Dr. A. J. Baxter, Dr. N. S. Davis, Dr. Gradle, and Dr. Christian Fenger. He was one of the warmest supporters of the Thiele bill, and made a strong fight for cheaper telephone service in the interest of the druggists.

Hundreds of friends called to inquire after the condition of the sufferer, and to express their deep regret when they learned of the unexpected death of a man they all loved—a man who will be greatly missed.

Dr. Dyche's personality was original and striking; to see him once, was to remember him always. Absolutely regardless of style and appearance, he was after results—and got them. He was never one of the boys, yet the boys liked him, respected him, loved him, and never allowed him to go without berth or room at State Association meetings, when his forgetfulness had not provided for these comforts.

He was always ready to advise, help, counsel, and, when needed, to lead the forces. Many were the fights he was in. The liquor question, the telephone-rate war, college education, cut-rates, in fact all that concerned Chicago druggists, enlisted Dr. Dyche's fighting abilities, and once started he never rested until beaten or victorious—and then all was serene. His opponents had no better friend than he. When the fight was over, he would take them by the hand, never harboring ill-feeling against any.

The druggists of Chicago honored themselves when they honored D. R. Dyche by turning out in full numbers to attend his funeral; his old associates in the Chicago Apothecaries' Society and the Illinois College were, with the President and Vice-President and Trustees of Northwestern University, the pall-bearers.

He will not be forgotten as long as the youngest of his friends is living.

At a recent meeting of the Executive Board of the Illinois College of Pharmacy (Department of Pharmacy, Northwestern University), Wm. Bodemann, treasurer, was made chairman of the Board, and W. A. Dyche was elected a member of the Executive Committee. The latter is a son of Dr. Dyche, who at the time of his death was chairman of the Board.

AMERICAN PHARMACEUTICAL ASSOCIATION—FORTY-FIRST ANNUAL MEETING.

The report of the A. P. A. convention, which appears in our correspondence department, has delayed the publication of the August number of the BULLETIN, but we feel satisfied that this inconvenience to subscribers will be more than compensated by the panoramic procession of events outlined by our Chicago correspondent. Lack of space has compelled us to retrench somewhat, but not in any important respect, the interesting account. This outline will hereafter be filled in by the publication in full of the more significant papers read at the Chicago convention.

PAN-AMERICAN MEDICAL CONGRESS.

Committee of Arrangements, Washington, D. C.—Samuel S. Adams, M.D., Chairman; J. R. Wellington, M.D., Secretary; G. L. Magruder, M.D., Treasurer.

Executive Committee.—Dr. Samuel S. Adams, Chairman; Surgeon-Generals Geo. M. Sternberg, U. S. A.; J. Rufus Tryon, U. S. N.; Walter Wyman, U. S. M. H. S.; Drs. S. C. Busey, G. Wythe Cook, Carl H. A. Kleinschmidt, H. L. E. Johnson, Llewellyn Eliot, H. H. Barker, C. W. Richardson, W. Sinclair Bowen, Geo. S. Ober, G. L. Magruder, J. R. Wellington, and John R. Walton, D. D. S.

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Ways and Means.—Dr. C. W. Richardson, Chairman; Drs. John Van Rensselaer, Wm. Dillenback, Henry B. Deale, and Wm. Compton.

Information.—Dr. W. Sinclair Bowen, Chairman; Drs. E. Oliver Belt and F. S. Nash.

Hotels.—Dr. Geo. S. Ober, Chairman; Drs. Wm. E. Handy and D. O. Leech.

PRACTICAL PHARMACY.

MARBLE DUST.

BY THOMAS WARWICK.

Of the many carbonates tried at different times for the manufacture of soda-water, marble is undoubtedly the one which combines the greatest number of qualities with the fewest defects. In the laudable effort to discover a good material from which to liberate the carbonic acid gas, almost every conceivable substance in which this gas was stored up has been tried, and one conscientious investigator even went so far as to experiment on making soda-water from powdered oyster shells, and only gave up the attempt when he realized the difficulty of freeing the gas so obtained from the unpleasant odor and taste that accompanied it. As carbonic acid is universally present in nature, it will readily be seen that the experimenters had a wide field to work in, especially when they turned their attention toward producing carbonic acid gas from organic sources. This field was, however, soon almost completely abandoned, owing to the various foreign gases which were found to be combined with the carbonic acid and which could not be well eliminated. In fact, to-day the only organic source of carbonic acid for soda-water purposes is that which incidentally exists in the large breweries. The carbon dioxide produced by the fermentation of the hops, not only serves to carbonate the beer itself, but the large amount of gas that escapes from the beverage is in some factories collected, and used for soda-water purposes.

In the United States, however, by far the most important source of carbonic acid for soda-water purposes is marble-dust, and it may be stated as a general rule that wherever a good white marble-dust can be obtained, this is far preferable to any other carbonate for the manufacture of soda-water.

The term "marble" is, however, of very broad application. It designates a great diversity of minerals in all of which carbonate of lime enters as the chief ingredient, but in which foreign substances may be present in varying proportions. The colored marbles, for instance, owe their brilliant tints to the presence of various layers of mineral substances, colored by metallic oxides; bitumen is also often present. These foreign substances will in many cases, when acted upon by the sulphuric acid, give rise to objectionable gases in the generator—gases which would give a bad taste and odor to the soda-water, and that could not be eliminated with our ordinary methods of purification. Hence no colored marbles should be employed for making soda-water; only pure white marbles should be used, and even among these there is room for judicious selection, for no two quarries furnish marbles of the same composition, and even in the same quarry I have frequently noticed astonishing differences in the quality of the marble. However, within certain limits, the output of a given quarry will not vary much in chemical composition, and the proportion of carbonate of lime and carbonate of magnesia present (which are among the best carbonates for soda-water purposes) will be found reasonably constant.

The composition of the marble-dust used is an important point for the purchaser to consider, as the advantage of a marble rich in carbonic acid lies not only in its smaller relative cost, at the same price, but also in the saving effected in freight, as well as in time and labor of handling, to say nothing of the economy of sulphuric acid secured by the use of a good carbonate. To take an example, let us consider the advantage of using a marble-dust rich in carbonate of magnesia. The atomic weight of carbonate of lime ($CaCO_3$) is 50.5, of which the calcium weighs 20.5. The atomic weight of carbonate of magnesia ($MgCO_3$), on the other hand, is 42.7, and the weight of the magnesia is 12.7. Consequently, 50.5 ounces carbonate of lime make 22 ounces of carbonic acid gas, whereas every 42.7 ounces of carbonate of magnesia make 22 ounces of the gas. From these figures it follows, as a simple calculation will show, that every twelve ounces of carbonate of magnesium used will give one ounce more of gas than if the same weight of carbonate of lime had been employed. Therefore, as it requires 42 ounces of gas to charge a ten-gallon fountain to 150 pounds pressure, 31 pounds of carbonate of magnesia would charge just one fountain more than 31 pounds of carbonate of lime. Hence we see that if in a given marble-dust the proportions of carbonate of lime and magnesia are equal, each forming 50 per cent. of the compound, 62 pounds of the marble will give ten gallons more of soda-water than would 62 pounds of marble-dust composed entirely of carbonate of lime; or, in other words, every barrel or marble-dust (allowing 420 pounds to the barrel) would charge seven fountains more of soda-water. This is, of course, not a very great economy, but the thrifty druggist will not overlook even a small saving like this one.

I have already spoken of the color of the marble used, but as all marbles, whatever may be their color or degree of purity in the natural state, appear white when finely ground, the color of the dust cannot be relied upon as an indication of the value of the marble. Nothing but a chemical analysis can be depended upon to ascertain this beyond a doubt, and this requires too much time to be undertaken by the average druggist. A more or less accurate idea of the comparative value of two marbles can of course be obtained by trying the two in the generator, but if a practical test be thus attempted as a means of comparing the value of different marbles it should be conducted with the greatest care, in order that the conditions may be precisely the same in each case. The same weight of marble, acid, and water should be used, at the same temperature, and in the same generator, and, to make the test fairer, the acid should in all cases be taken from the same carboy. Nor is this all. The same amount of agitation should be given the soda-water in each case, and the charging pressure should also be the same, and should be due to carbonic acid and not to the presence of air or foreign gases. These conditions can be obtained only by dint of extreme care, but unless carefully made the tests will have no real value whatever.

In this as in many other matters, the average druggist will be obliged to rely to a great extent on the reputation of the house with which he is dealing, trusting to his subsequent experience to confirm or reverse his judgment. He cannot possibly test every lot of every substance bought, but an occasional test of different products when he happens to have a few spare minutes at his disposal will invariably prove of great value as giving him some idea of how matters really stand.

On account of its cheapness, marble-dust is seldom wilfully adulterated, but, owing to its very cheapness, sufficient care is often not observed to keep it perfectly pure. On this account it is best to purchase marble-dust only from mills where no other mineral is ground, in order to avoid getting an undesirable admixture of foreign substances. It is a great temptation, even in those mills which grind marble solely for soda-water purposes, to grind up all the odds and ends of the factory along with the marble. Not that there is any special gain in the process, but it is more convenient to dump all odds and ends of colored marbles, etc., into the mill, than to cart them away. Nor is it possible for the druggist to guard against such unscrupulous methods, however careful he may be.

Among the natural impurities of marble-dust are flint, silica, and iron. Flint and silica are not actively harmful, as they are not acted upon by the acid used in the generator. They are, however, sometimes present in so large a proportion as to considerably increase the cost of the marble-dust, since the purchasing price, freight, and expense of handling are proportionately as great on the inert and useless flint and silica as on the pure carbonate. The presence of these two impurities may be detected by examining the marble-dust, or, better still, the refuse from the generator, under a strong microscope. They have a sharp fracture very distinct from that shown by the particles of true carbonate, and they are found unchanged in the spent charge from the generator. Iron, if present in any appreciable quantity (except under the form of a sulphate), is far more objectionable than either flint or silica, for it is acted upon by the sulphuric acid, and gives rise to objectionable gases, principally sulphuretted hydrogen, and a bad odor and taste are thus imparted to the soda-water.

As it is customary to sell marble-dust by bulk and not by weight, in comparing the price of any two brands it will be well to remember that there are barrels and barrels, and that a barrel containing only 360 pounds of marble-dust is, other things being equal, 10 per cent. more expensive at the same price than a barrel which contains 400 pounds. Moreover, it is not enough that the barrel when shipped should contain the full amount of marble-dust; the barrel should be of good quality and well packed, or when received it will be found that a large portion of the contents has escaped. Customers living at a distance should insist upon having the barrels of first quality, as the cost of transportation is so great that it is much better to pay the extra cost of a first-class barrel than to find, as I have often known to be the case with shipments to foreign countries, that over one-half of the marble-dust has leaked out of the barrel.

Aside from the question of the composition of a marble-dust, its value for soda-water purposes depends in great measure upon its density. The greater the specific gravity of a marble, or, in other words, the more dense it is, the better is it suited for making soda-water, whereas a porous marble is apt to contain all sorts of impurities absorbed either in the quarry or by subsequent exposure to the air, and these may give rise to foreign gases in the generator. It is precisely on account of its porous nature that whiting is unfit for use in making soda-water, unless put through quite an expensive process of purification.

The weight of marble-dust, of course, varies in great measure according to the density of the marble, to its chemical composition, and to the degree of fineness to which it is ground. Thus, while certain marbles weigh in the block as little as 165 pounds to the cubic foot, white Italian marble weighs 169 pounds, and one of the best marbles on the market for carbonating purposes weighs as much as 180 pounds to the cubic foot.

To the uninitiated it would seem as though the finer a marble were ground, the more it would weigh to the gallon, but the reverse is the case. Just as a pound of ground coffee cannot be contained in the same bag that held a pound of the coffee beans, so if a barrel of coarse marble-dust be ground to a greater degree of fineness it will be found to more than fill the barrel. The reason for this curious state of affairs is not at first sight apparent. The larger the lumps of marble used, the larger are the spaces left between the pieces. But the finer it is ground, the greater are the number of these spaces, however small they may seem to us, and they really aggregate a greater amount, all told, than the smaller number of larger spaces. Anyone can convince himself of the fact by a practical test, but if he wishes to reason it out he must remember that the largest amount of marble-dust that could be put into a barrel would be one lump of the exact shape and size of the barrel. If this lump be now broken up into pieces, those pieces can no longer be made to fit into the barrel again, no matter how cunningly they may be arranged. And each piece when broken up will in like manner occupy more space than it did before it was broken. And so the process will continue. No matter how fine we make the marble, the finer it becomes, the more space it will occupy in the barrel.

Every marble-dust, no matter how pure in composition, nor how carefully put up in barrels, contains a certain amount of impurities. The druggist should therefore, whenever possible, ascertain from his supply-house the exact analysis of the marble furnished him. Some brands are so pure that they contain only one-third of one per cent. of impurities of all kinds, whereas others contain much more. It is not, however, so much the actual amount of impurities present that makes a difference, as the nature of those impurities. It is a matter of comparatively trifling importance how large a proportion of inert substances are present, but there are certain substances liable to be acted upon by the sulphuric acid, of which even one-third of one per cent. would be sufficient to spoil every batch of soda-water made.

I have already spoken of the advantage of using a marble-dust rich in carbonate of magnesia. Aside from the larger amount of gas produced, there is another advantage of considerable importance, namely, the ease of agitation, for the residue resulting from the action of the sulphuric acid on the magnesia is soluble in water, and the contents of the generator are therefore much more freely worked than is the case when the marble used is composed almost entirely of carbonate of lime. Another advantage, too, is that the access of the acid to the marble-dust is greatly facilitated. With an insoluble residue, the marble is liable to become encrusted with a coating which renders the access of acid somewhat difficult. The only objection to the use of a marble containing considerable carbonate of magnesia is the increased danger of caking, either of the marble itself or of the spent materials, for this soluble sulphate of magnesia will, unless properly looked after, give great trouble on this score. I have already treated on this point in previous articles, and will only repeat here that the caking can be entirely guarded against by care in charging the generator, by using a sufficient quantity of water to hold the sulphate of magnesia in solution, and by emptying the generator as soon as a charge has been run off.

Before closing this article, I wish to state for the benefit of those who desire to make calculations involving the conversion of a given volume of marble-dust into a given weight, or *vice versa* (and such calculations are of frequent occurrence), that in the case of the marble already mentioned, weighing 180 pounds to the cubic foot in the block, the marble-dust when ground to a medium grade of fineness (the grade to be recommended for soda-water purposes) weighed by actual test 3.56 pounds to the quart, or 14¼ pounds to the gallon.

NOTES ON SOME ANIMAL OILS AND FATS USED IN PHARMACY.

BY P. L. SIMMONDS, F. L. S.

(*Continued from July number.*)

There are some oils and fats which are obtained in such small quantities as to be more matters of scientific curiosity than of commercial use, such as bear's grease, tiger-, tapir-, deer-, and gorilla-fats, etc. The fat of the flying fox (*Pteropus medius*) boiled down is a favorite remedy in India for rheumatism in the joints.

In the case of lard, tallow, and other animal fats, the general mode of extraction is, to boil in water the cellular tissue containing the oil, or to heat it with steam; the heat and moisture rupture the cells, and the oil escapes, floating on the top, liquefied by the heat. Sometimes a little sulphurous acid is added to facilitate the destruction of the membrane forming the oil-cells.

Adeps is a chemical term for the animal fat or oil, which differs in various animals and hence bears specific names. That of the horse is called grease; that of cattle and sheep, tallow, fat, and suet; that of the hog, lard; of marine mammals, blubber and train-oil.

ALPACA TALLOW is a solid fat obtained in South America, where a pomade of it is much employed; the luxuriant and beautiful hair of the ladies is attributed to its use. It never appears in the markets of Europe, but as the animals are numerous in certain States of South America, and the body of the animal under the skin is covered with fat, there must be a large quantity of tallow available. Judging from the imports of alpaca wool into the United Kingdom, there must be fully 400,000 alpacas sheared annually, but the numbers kept or killed it is impossible to determine. In Bolivia there are about 3,000,000 of these animals, in Peru some 4,000,000, and in Argentina, Chile, and other republics at least 1,000,000.

ANTA OIL.—A liquid crystalline oil, of a yellow color, obtained from the *Tapir americana* in Brazil. It is used as an emmenagogue, and is considered a remedy for rheumatism.

AXONGE is a French name for the fat from the adipose tissues accumulated on the surface of the intestines of the pig, and not to be confounded with lard, which is the fat between the flesh and the skin, more consistent and less fusible. When used as an alimentary product, it is known in France under the name of *sairidoux*. It is of a white color or faintly yellow, and contains about 38 per cent. of stearin and 62 of olein; in saponifying it gives 9 per cent. of glycerin.

BEEF MARROW.—A grease obtained from the bones of cattle, used for food, and also as a pomade. The proportion of stearin and margarin is 76, and of olein 24 per cent. In mutton marrow the constituents are reversed, being 26 per cent. of stearin and 74 of olein.

BEAR'S GREASE.—Formerly this was in great repute as a dressing for the hair, and some forty or fifty of the European bears were annually slaughtered in London for their fat, but this has quite gone out of fashion. The American bear (*Ursus americanus*, Pallas) is encased in an enormous layer of fat. But bears are being rapidly annihilated. Every nation, however barbarous, has its peculiar greasy application for the hair. The Esquimaux use seal oil; the Greenlanders and others, train and various fish oils; the natives of Brazil, turtle-egg oil and alligator fat; the New Zealanders and other natives of the Pacific, shark oil; in Europe, beef marrow and lard. These rancid applications, and indeed most animal oils, from their harsh properties, are peculiarly injurious and the promoting causes of many of the scrofulous diseases of the scalp. Fluid vegetable oils are infinitely preferable, and are in general use in most warm countries.

[The custom of anointing the hair and body is common at the present day throughout the East, where it is practiced not only as a part of personal elegance, but to soften the skin, and as being beneficial medically in certain disorders.]

CASTOREUM OIL.—A medicinal oil is obtained, in the proportion of 1 to 2 per cent., by distilling castor pods.

GLYCERIN.—A colorless liquid of a pure sweet taste, which is obtained on a large scale as a by-product from soap and candle works, when the fats are distilled by high-pressure steam. It is largely prepared, very pure, at Price's Candle Co., Battersea, England. Glycerin has many valuable commercial and medicinal uses, being employed as a preservative and antiseptic; for soap and perfumery; as a cosmetic and emollient; as a substitute for cod-liver oil; in the manufacture of nitroglycerin, dualine, lithofracteur, and other explosives. In Cincinnati the manufacture of glycerin from lard is largely carried on. The lard is treated with hot water until the glycerin is separated from the fatty acids and freed from the disagreeable odor that characterizes glycerin made in the process of soap manufacture. Yellow and brown glycerin are sent out in barrels of 5 cwt.; distilled glycerin in carboys, etc.; and Price's glycerin in cases containing 50 one-pound bottles.

According to an article in the ***Chemist and Druggist***, in the close of 1891, the total output of crude glycerin in the world was said to be 40,000 tons per annum, of which 14,000 were obtained in soap manufacture and 26,000 tons in stearin manufacture. Of the glycerin gained in soap-making, 5,500 tons are produced in the United Kingdom, 3,500 tons in France, 3,000 tons in the United States, and 2,000 tons in Germany. Many more countries participate in the production of stearin glycerin. Quite recently a process is said to have been discovered by which soap-makers are enabled to recover the entire proportion (10 to 12 per cent.) of glycerin in the fat, in an almost pure condition and with very simple and cheap apparatus. This process will very materially affect the glycerin industry, as the glycerin from the soap lye has hitherto been used, almost exclusively, for dynamite-making. The output of this explosive in 1886 was estimated at 40,000 tons.

AN ACT TO REGULATE THE PRACTICE OF PHARMACY AND THE SALE OF POISON IN THE STATE OF CALIFORNIA.*

The people of the State of California, represented in Senate and Assembly, do enact as follows:

Section 1. One year from and after the passage of this act, it shall be unlawful for any person to conduct any pharmacy or store for dispensing or compounding medicines, unless such person be a registered pharmacist within the meaning of this act; and it shall be unlawful for any person to compound any physician's prescription, unless such person be a registered pharmacist or a registered assistant pharmacist within the meaning of this act, except as hereinafter provided.

Sec. 2. Any person, in order to be a registered pharmaclst, must be a graduate of pharmacy or a licentiate in pharmacy.

Sec. 3. (*a.*) Graduates of pharmacy are persons who have had four years' experience in stores where the prescriptions of medical practitioners are compounded; have passed the examination as registered assistant pharmacist; have then attended the lectures at a legally constituted college of pharmacy for at least two years, and have then successfully passed a final examination before the State Board of Pharmacy.

(*b.*) Licentiates in pharmacy are persons who at the passage of this act are managing or conducting pharmacies in this State, either on their own account or for some one else, and who, within one year from and after the date of passage of this act, shall have passed an examination before the State Board of Pharmacy, said examination to have a standard similar to that of the final examination of a legally constituted college of pharmacy.

(*c.*) Assistant pharmacists are persons of not less than 21 years of age who have studied the art of pharmacy in a store where the prescriptions of practitioners of medicine are dispensed, for at least three years, and who have successfully passed an examination before the State Board of Pharmacy.

Sec. 4. Every person claiming the right of registration as Graduate of Pharmacy shall present to the Board of Pharmacy satisfactory proof that he has fulfilled the requirements set forth in Section 3, *a*, and Section 6 of this act, excepting the final examination. The State Board of Pharmacy shall then grant him an examination, upon his paying the sum of twenty-five dollars, and shall issue to him—in case of his passing said examination successfully—a certificate of registration as Graduate of Pharmacy.

Sec. 5. Every pharmacist claiming the right of registration provided for in Section 3, *b*, of this act, shall, within one year from and after the passage of this act, forward to the Board of Pharmacy satisfactory proof that he was managing or conducting a pharmacy in the State as set forth in Section 3, *b*, of this act. The Board of Pharmacy shall then grant to said applicant an examination, upon his paying the sum of ten dollars, and shall issue to him—in case of his passing said examination successfully—a certificate of registration as Licentiate in Pharmacy.

Sec. 6. Every person claiming the right of registration as Assistant Pharmacist shall present to the State Board of Pharmacy satisfactory proof that he has fulfilled the requirements set forth in Section 3, *c*, of this act—excepting examination. The Board of Pharmacy shall then grant to said applicant an examination, upon his paying the sum of five dollars, and shall issue to him—in case of his passing said examination successfully—a certificate of registation as Assistant Pharmacist.

Sec. 7. Within thirty days after the passage of this act, and every fourth, resp. second year thereafter, the Governor shall appoint five, two, and three competent pharmacists respectively, to serve as a State Board of Pharmacy. The members of this Board shall, within thirty days after their appointment, individually take and subscribe before the County Clerk in the county in which they individually reside, an oath, faithfully and impartially to discharge the duties prescribed by this act. Two members shall hold office for the term of four years, and three for the term of two years, and until their successors are appointed and qualified. In case of vacancy in the Board of Pharmacy, the Governor shall fill the same by appointing a pharmacist, to serve for the remainder of the term only. The office of said Board shall be located in ———. The Board shall organize by electing a president and a secretary, the latter to be *ex-officio* treasurer of the Board. Three members of the

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* A correspondent from California submits this Act to regulate the Practice of Pharmacy in California. *Apropos* of the same, we publish a communication from James Vernor, of Detroit, whose experience is well known to our readers in endeavoring to secure satisfactory legislation for the elevation of pharmacy by proper and practicable laws, and who defines his opinion as to the inefficacy of the Act proposed by our California correspondent.

Board shall constitute a quorum. Immediately after organizing, and every second and fourth year respectively thereafter, the President shall appoint two members of the Board to serve as inspectors of pharmacies, said members to hold this office until the expiration of their terms as members of the Board and until their successors are appointed. The Board shall meet at least once in every six months, and have power to make by-laws for the proper fulfillment of their duties. The duties of the Board of Pharmacy shall be to transact all business pertaining to the legal regulations of the practice of pharmacy and the sale of poisons; to prosecute, with the aid of the respective district attorney, every person who violates the provisions of this act; to examine and register as pharmacists or as assistant pharmacists all applicants whom it shall deem qualified to be such, respectively; and to examine once every year the state of purity of chemicals and drugs kept in the pharmacies of this State, as hereinafter provided. The Board shall render an annual report of its proceedings to the Governor of the State, in which shall be contained the names of every registered pharmacist and assistant pharmacist, their places of residence and dates of registration.

Sec. 8. The Secretary shall give receipts for all moneys received by him, and disburse the same by order of the Board for necessary expenses, taking proper vouchers therefor. The balance of said moneys, after paying the expenses of the Board, he shall pay to the State Treasurer, who shall keep it as a special fund to be used in carrying out the provisions of this act.

Sec. 9. The Inspectors of Pharmacies shall together visit once a year every pharmacy in the State, and shall personally convince themselves by actual examination or analysis of a few samples from drugs, chemicals, and officinal preparations, taken from the stock of said pharmacy, that said drugs, chemicals, and preparations fulfill the requirements of the Dispensatory of the United States of America, as provided for in Section 10 of this act; and they shall examine also if all the requirements regarding the keeping and storing of poisons, as provided for in Section 12 of this act, are complied with. They shall then report the result of their investigation to the State Board of Pharmacy.

Sec. 10. The members of the Board of Pharmacy shall each be paid the some of five dollars per diem for every meeting of the Board which they attend, and the Secretary shall receive such additional compensation as the Board may direct. The Inspectors of Pharmacies shall each be paid the sum of five dollars per diem and actual expenses, while on their inspection tour, but not more than for a time of 120 days each year. All compensations of members, and other expenses of the Board, shall be paid out of the examination fees and fines, any deficiency of funds to be made up by a *pro rata* assessment of all registered pharmacists and assistant pharmacists, which, however, shall not exceed the sum of five dollars and three dollars each year for each registered pharmacist and assistant pharmacist respectively.

Sec. 11. No person shall add to or remove from, or cause to be added to or removed from, any drug, chemical or medicinal preparation, any ingredient or material for the purpose of adulteration or substitution, or which shall deteriorate the quality, commercial value, or medicinal effect, or alter the nature or composition of such article; and no person shall sell or offer for sale any such adulterated, altered, or substituted drug, chemical or medicinal preparation, without informing the purchaser of the adulteration or sophistication of the article sold or offered for sale. For determining the quality of drugs, chemicals, and officinal preparations, the requirements of the U. S. Dispensatory shall be the guide, and any drug, chemical, or officinal preparation which varies from said requirements more than 5 per cent. shall be considered to be of insufficient quality. Any person who shall violate any of the provisions of this section shall be guilty of a misdemeanor, and upon conviction thereof shall be liable to all costs of the action and to confiscation of such adulterated or sophisticated articles; and for the first offense be liable to a fine not exceeding fifty dollars, and for each subsequent offense to a fine of not less than fifty dollars nor more than one hundred dollars; and in case that the offender be a registered pharmacist, his registration as such registered pharmacist shall stand canceled on the third offense, and he shall not be allowed to apply for a new registration for the period of five years from the date of cancellation of his registration.

Sec. 12. It shall be unlawful for any person to sell any poisons, enumerated in Schedule "A" or "B," appended to this act, unless such person be a registered pharmacist or registered assistant pharmacist; nor shall it be lawful for a registered pharmacist or a registered assistant pharmacist to sell or deliver any poisons, enumerated in Schedule "A," unless the purchaser presents a prescription from a medical practitioner, calling for such poison, or a written permit from the police authorities of the city, town, or county in which said purchaser lives, which shall set forth: Name and quantity of poison wanted; name and residence of purchaser; and the statement that said police authorities consider it safe to the welfare of the community to deliver said poison to said purchaser; such prescription or permit to be kept on file by said pharmacist for at least five years. The provisions of this section shall not apply to the selling of poisons by wholesale dealers, providing the purchaser be a registered pharmacist. But it shall be unlawful for any wholesale dealer to sell or deliver any poison enumerated in Schedule "A" to any person, unless such person be a registered pharmacist or a practitioner of medicine or a veterinary surgeon.

Any person violating the provisions of this section shall be guilty of misdemeanor, and upon conviction thereof shall be liable to a fine of not less than one hundred dollars nor more than five hundred dollars.

Sec. 13. It shall be unlawful for any registered pharmacist or assistant pharmacist to fill any physician's prescription, unless the ingredients of the prescribed medicine are enumerated or written with their English or Latin names according to the U. S. Dispensatory. The provisions of this section shall not apply to new remedies or proprietary medicines or combinations of medicines, provided that the exact chemical formula or composition and the process of manufacture of said remedies, medicines or medicinal combinations be known to said pharmacist.

Any pharmacist failing to comply with the provisions of this section shall be guilty of a misdemeanor, and upon conviction thereof shall be liable to a fine not exceeding fifty dollars.

Sec. 14. It shall be unlawful for any registered pharmacist to keep in stock any poisons, enumerated in Schedule "A," unless they be kept in a separate cabinet or case, said cabinet or case to be used for the storage of such poisons exclusively, except as hereinafter provided, and to be provided with a lock and key, and to be opened by a registered pharmacist or assistant pharmacist only, and to be plainly marked: Poisons—Schedule "A;" nor shall it be lawful for said pharmacists to use any scales, mortars, spatulas or other instruments for dispensing said poisons, unless such scales, mortars or other instruments are used [only] for dispensing poisons and are kept together with the poisons in the cabinet or case referred to in this section.

Any pharmacist failing to comply with the requirements of this section shall be guilty of a misdemeanor, and upon conviction thereof shall be liable to a fine not exceeding one hundred dollars.

Sec. 15. All fees for registration, and all fines imposed on any person for violating any of the provisions of this act, shall be paid to the Treasurer of the State Board of Pharmacy.

Sec. 16. Any person who shall attempt to procure registration for himself, or for any other person under this act, by making, or causing to be made, any false representations, or who shall fraudulently represent himself to be registered, shall be deemed guilty of a misdemeanor, and shall, upon conviction thereof, be fined in a sum not exceeding two hundred dollars. Any registered pharmacist who shall permit the compounding and dispensing of prescriptions of medical practitioners in his store by persons not registered, except by junior assistants under the direct supervision of registered persons, or any person not registered who shall retail medicines or violate in any way the provisions of Section 1 of this act, shall be guilty of a misdemeanor, and upon conviction thereof shall be liable to a fine of not less than one hundred dollars nor more than five hundred dollars. Any registered pharmacist who shall resist in any way the inspection of his pharmacy by the Inspectors of Pharmacies, as provided for in Section 9 of this act, shall be guilty of a misdemeanor, and upon conviction thereof shall be fined in a sum of not less than fifty dollars nor more than two hundred dollars.

Nothing in this act shall apply to or interfere with the business of any practitioner of medicine who does not keep a pharmacy or open shop for the retailing of medicines or poisons; nor shall general dealers come under the provisions of this act, in so far as it relates to the keeping for sale of proprietary medicines and drugs in original packages, but in no case shall they compound or prepare any pharmaceutical preparations or prescriptions, nor shall they sell any poison enumerated in Schedules "A" and "B," appended to this act.

Sec. 17. All persons registered under this act shall be exempt and free from jury-duty.

Schedule "A."

Arsenic and its preparations; hydrocyanic acid; corrosive sublimate, cyanide of potassium, strychnia, cocaine, and all other vegetable and animal poisonous alkaloids and their salts; opium and all its preparations which contain two grains or more to the ounce, mercury and all its salts, nitroglycerin, phosphorus, nitrite of amyl, chloroform, concentrated nitrous ether, essential oil of almonds.

Schedule "B."

Aconite, belladonna, colchicum, conium, nux vomica, savin, cantharides, digitalis, and their pharmaceutical preparations; croton oil, chloral, carbolic acid and oxalic acid, nitrate of silver, chloride of gold, bromine, iodine, essential oil of mustard, tartar emetic, sugar of lead, sulphate of copper, and the salts of zinc.

All acts or parts of acts which conflict with this are hereby repealed.

To the Editor of the BULLETIN OF PHARMACY:

DEAR SIR:—I return herewith the copy of the proposed Pharmacy law in relation to which you asked my opinion.

I have read it with great interest, and certainly consider it the queerest proposition for the purpose that it has ever been my fortune to peruse.

It starts out by retiring all persons from business one year from date who fail to pass the Board's examination, and provides no means for the payment to them for the loss of stock or fixtures.

It forces all applicants for examination as registered pharmacists in the future, to be persons who shall have had four years' store experience, and afterwards two years' college experience. (That would be a good thing for the colleges.)

It allows persons of 21 years of age or more to become registered assistants, and those of 23 years of age or more to become registered pharmacists; it entirely fails to provide for the education of the apprentice while getting the four years' experience, by omitting to allow him to do work under proper supervision.

The fee for examination, $25, $10, $5, respectively, is, in my opinion, excessive.

No provision has been made for examinations; they should be made by a full Board, or at least by a quorum thereof, and should be at stated times and places.

The appointment of members of the Board calls upon the Governor to select "*competent* pharmacists," but if vacancies occur he may appoint "pharmacists" to fill the said vacancies. Members of Boards of Pharmacy should have had at least ten years' experience in the business; politics should be kept as far as possible away from influencing these appointments, and a required long time of service is a great aid in that direction.

As a business measure the secretary should not be treasurer; they should be separate offices and become a check upon each other; all vouchers should be approved by the president and secretary, then paid by the treasurer, and a copy of the vouchers should be sent to the State Auditor, with the annual report of the secretary.

The clause as to the inspectors of pharmacies is the queerest of all. There are to be two of them, and they are to visit *together* every pharmacy in the State once each year, and to make examination and analysis of stocks. They are to do all this in 120 days, and for which they are to receive the munificent sum of $600. What competent pharmacist would be willing to spend four months away from his pharmacy each year for that amount? Competent pharmacists ought to value their time at a little more than $1,800 a year.

I never could see why any money raised entirely from pharmacists, for the purpose of enforcing the proper conducting of pharmacies for the safety of the public, should be placed in the State treasury; the money should remain with the Board's treasurer, who should be obliged to give a good and sufficient bond, and that bond should be deposited with the State Auditor.

There is no provision in the Act for the annual re-registration; but, instead, a provision is inserted whereby any deficiency in the funds may be made up by a *pro rata* assessment annually upon the registered pharmacists and assistants, which shall not exceed $5 and $3 respectively. The annual re-registration, with a definite fee, is in my opinion far preferable.

The feature that permits the placing of the fines collected, in the treasury of the Board, is commended, but, unfortunately, in this Act no provision is made for the collection of the fine after its imposition, as, in every instance where a fine is mentioned, the penal clause (without which collections cannot be enforced) is conspicuous by its absence.

I can see but one object in the proposed law, and that is to force all drug clerks to enter a college of pharmacy or retire from the practice of pharmacy. While I consider any drug clerk very unwise who can attend a college of pharmacy and does not, I at the same time realize that many who have found it impossible to attend colleges have thoroughly fitted themselves for the practice of pharmacy, behind the counter, and any law that would prevent such education is, in my opinion, both improper and unjust. Very sincerely yours,

JAMES VERNOR.

CHEMISTRY.

A PROBLEM IN GLASS-MAKING.*

BY DR. OTTO WITT.

In almost all the provinces of technology there are a number of phenomena in the occurrence of which chemical and physical processes are so closely interwoven that it often becomes difficult to overcome the confusion and ascertain the exact cause. In this category must be placed the white panes of window glass which, in the lapse of years, assume a green or violet hue. Such panes of glass are occasionally seen in old houses; the older the structure, the more striking is the coloration. People who are averse to the effort of following things up to their origins, say when they are asked for the cause of such coloration that the glass factories of former days were not capable of making such good white glass as is at present produced. But usually we observe in the same windows, containing such green and violet panes, several others of irreproachable whiteness, and our last doubts as to whether the green and violet glass was once equally acceptable disappear when we have occasion to take one of the colored plates out of its frame. We then see that at the edge of the plate, where the glass was imbedded in putty, there is no trace of coloration. We thus at once detect the cause of the entire phenomenon. It can be nothing else than the light itself which, year after year, streams in a perfect flood through the uncovered part of the plate, while the edge, covered by putty, is protected from its action. The phenomenon is often observed to be most striking in the clearest and brightest glass. Only the best quality could have been chosen for covering the cupola-formed skylight of the Old Pinakothek or art gallery at Munich. Several years ago many of these panes of glass gave forth a most beautiful purple-violet, whilst others of the same age remained perfectly colorless. By this time they have all doubtless been replaced by new panes, for the violet light which they emitted into the picture gallery began finally to prove very annoying in contemplating the pictures.

If—as is undoubtedly the case—not all glass plates, but only certain colorless ones, undergo such modifications as a result of exposure to the light of the sun for a number of years, some peculiarity or other in the production and chemical composition of such glass must be at fault. This is indeed the truth; the cause of the coloration of glass has been known for a long time, but the manner in which from this cause the effect is produced is ordinarily stated erroneously even in books and articles which deal particularly with the technology of glass.

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* Translated from *Prometheus*.

Ordinary window glass is produced by fusing together quartz-sand, limestone, and soda. When these materials are perfectly pure and are not subjected to the slightest admixture during manipulation, a perfectly colorless glass is obtained, which in a hundred years would not be modified by the action of light. But here is the difficulty: perfectly pure materials are rare, and very slight quantities of iron combinations find their way only too readily into the composition of the glass, despite all precautions. Now the presence of iron, even in the very smallest traces, produces coloration in the glass, and this coloration varies according to circumstances. When in the form of the ferrous salt the iron exerts a much more pronounced coloring action than when present as oxide; in the first case the color produced is a deep bottle-green, in the latter yellow. Accordingly, if the glassmaker has slight traces of iron in his mixture, he selects the proper means of transforming the iron into the oxide before proceeding with the manufacture of the glass. Thus he will be able to produce plates whose extremely light yellow coloration is no longer perceptible in the thin layer of glass, which may accordingly be considered colorless. But iron is peculiar, in that its oxide combinations are gradually transformed into ferrous salts by the action of sunlight. With some of these combinations the process is so ready and speedy that it may be utilized for photographic processes; with others it is much slower. Of the latter kind is ferric silicate, the coloring constituent of the above-mentioned yellowish glass. This salt likewise obeys the general law when long subjected to the action of sunlight, and becomes converted into the ferrous silicate which is colored green; and since, as stated before, the coloring power of this salt is incomparably greater than that of the oxide salt from which it was produced, the green color now imparted to the glass is very pronounced, whereas the previous yellow tint was not perceptible. Thus it happens that window panes which at the outset were colorless, may become green in the course of years.

But how do we account for the more frequent occurrence of the violet tint in the glass plates? In a last analysis this phenomenon is found to rest upon the same cause, the process, however, being complicated by an additional factor. When the quantity of the iron is tolerably large, the coloration of the glass through the transformation of the iron into oxide cannot be altogether prevented. The yellow hue of the glass remains distinctly perceptible. But in this case the glassmaker adds a substance to the glass which under ordinary circumstances would color it violet. Manganese will serve this purpose. When combinations of manganese are added in the proper proportion to glass which is colored yellow by iron, the two complementary colors merge into each other reciprocally and the double-colored glass appears colorless. This is a purely physical process which, in modified form, is not seldom resorted to in other branches of technology. The manganese is added to the glass in the form of superoxide of manganese, and this mineral salt receives the name of "glassmaker's soap" in the glass factories, because it has the property of washing colored glass white. The glassmaker utilizes this soap all the more willingly, inasmuch as on introducing it into the white, glowing, molten mass, oxygen is developed and thus the oxidation of the iron into oxide and the compensation of the yellow oxide coloration are both simultaneously effected. In this way the iron coloration, masked by the violet of the manganese, is hidden from the human eye, but not from the effect of the good old sun. The latter performs his office unperturbed, and slowly but surely transforms the ferric oxide salt into the green ferrous salt. Now green and violet are not reciprocally compensating, as are yellow and violet; on the contrary, their effects are *added together*, forming a somewhat bluish-violet, and thus is this shade developed in the window plates modified by long exposure to the sun. In our day, since we have become familiar with the peculiar phenomena of iron-bearing and discolored glass, we seek, by careful selection of materials as free from iron as possible, to manufacture glass which is colorless and so remains; but inasmuch as the effect of the sunlight upon glass becomes perceptible only after the lapse of decades, we of course cannot tell how many of the panes of glass which are now inserted into our windows as colorless will deserve this designation after the lapse of a generation.

In America, where nothing is more highly prized than that which bears on its brow the stamp of venerable age (because there antiquity is the greatest rarity), glass plates which have become green or violet in the course of time are more admired and are looked upon as "aristocratic." Amongst us the venerable character of things begins only when their age may be computed by centuries, and we accordingly grow very enthusiastic over the "Butzenscheiben,"* whose origin we must seek back in the mediæval ages, and which in our eyes are worth their weight in gold when genuine. There are, however, irreverent people on this side as well as on the other side of the ocean, to whom a clear, colorless pane of glass, incapable of modification, is most desirable.

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* Little square panes of colored glass, bearing a raised and inscribed circle.

BOTANY AND MATERIA MEDICA.

A COLLECTIVE STUDY OF COCILLANA.—(GUAREA-SP.)*

Botany and Pharmacognosy, by H. H. Rusby, M.D.—Chemistry and Pharmacy, by Virgil Coblentz, A.M., Ph.G., Ph. D.—Clinical History and Therapeutics, by R. W. Wilcox, M.A., M.D., LL.D.

BOTANY—BY H. H. RUSBY, M.D.

So extended already has become our list of therapeutic agents in this most opulent era, that the investigator of our still unexplored resources is almost called upon to present a defense, or at least to offer an apology, on presenting a fresh result of his discovery. Indeed, a very audible cry already proceeds from the less reflective, broad-minded or progressive branch of the profession against any further additions to what to them may perhaps be regarded as an "incubus of knowledge." Nor can I allow the present occasion to pass without saying a word to strengthen the lines of that important department of materia medica to which the present paper forms a humble contribution.

The one fact that materia medica is a science is a sufficient evidence that no power can stay its steady, onward sweep toward completeness; toward a time when the relations of every known substance to physiological and therapeutical effects shall have become formulated. But while this consideration is sufficient to insure the loyalty of the scientific, the investigation of new remedies is not without its attractions for those who are—I will not say more practical, but—more *immediately* practical; that class who demand a prompt return in practical results for every effort which they consent to put forth.

Let such an one ask himself how many cases of disease which nature herself would not bring to a favorable termination, he can by the agency of medicines control. If learned and skillful, he will doubtless claim that the percentage is a large one; but even at the largest, how very many cases remain in which he finds himself helpless to the end? How many the diseases for which we have not a single direct, specific combating agent? Or, how many medicines we possess which do their work so imperfectly or uncertainly as to leave much to be desired in the direction of finding a similar but superior agent? Do those who fail to appreciate the importance of the search for new remedies reflect that every remedy was once undiscovered, and that it is the same influences which have given us within comparatively recent times such remedies as quinine, ipecac, cocaine, cascara sagrada, belladonna, gelsemium, acetanilide, which now appeal for their sympathy and support that they may succeed in contributing others of equal or of greater importance?

Again, let us question why it is that certain physicians excel in the handling of intractable cases. Because, one replies, they excel in judgment; but judgment is defined as the power by which we make choice, and we cannot choose until we have the objects of choice before us. Our good judgment is made effective only when it is based upon broad knowledge, and this knowledge can exist only as a result of discovery.

Looking, upon the other hand, at the field for research, we find in the vegetable kingdom alone, out of its two hundred thousand species, probably twenty-five organisms whose properties have not been investigated at all, for every one which has been so, and we can see no reason why there should not be at least as much of importance to be brought to light as has already been given us.

The mere announcement of a microbe-killer, a pyoktanin or an antikamnia, copyrighted names for mere nonentities, I am not referring to as contributions to this department of knowledge. Such are, in some particulars, not above the therapeutical dicta of the middle ages. Breadth of view and liberality of treatment find no room for carelessness in requirement, no excuse for looseness in method. It is their very virtue that they tend toward accuracy of detail and rigor in criticism. And so it happens that in these days of fine specialization, few practical results are reached and verified by a single investigator. Association of forces has become almost a requisite. The mere preliminary announcement of therapeutic properties by no means implies a discovery. It merely indicates a promising field for research, and is construed as an invitation to associate workers to contribute their assistance. If, as in the present instance, the article be a vegetable product, the botanist must first investigate its source, that we may know its position in the plant series and consider its important relations to other members of the vegetable materia medica, and to furnish a means of establishing a base of supplies. The pharmacognosist must then establish the diagnostic characters of the product, as a means of identifying such supplies and estimating their quality. The chemist must determine its constituents, in order that the physiologist can locate so far as possible the properties that he may discover, and indicate to the pharmacist those which are desirable and those which are negative, or perhaps even undesirable. The pharmacist must then study for the preparations which shall most fully and satisfactorily represent the medicinal properties of the drug. Lastly, the therapeutist must establish the value of the medicine and the methods of applying it in disease.

In the present instance it has not been possible for the investigation to proceed in this order. No chemist could be found with sufficient leisure and sufficient interest to fully analyze the drug, until it should have been pretty clearly established by clinical trial that it was worthy of this expenditure of time and effort. So for five years we have been limited to investigations which, though careful and accurate, have been unsystematic as to their association. Even now, the results are not so complete as we had hoped to have them for this presentation. The botanical determination of the plant has offered unusual difficulties, and though the conclusion now reached is almost certainly correct, it will require verification by studies in foreign herbaria before it can be published as authoritative. The chemical investigation has suffered some delay from accident, and the analysis is not yet complete. The clinical study is the only one which offers thoroughly satisfactory results, and this not in the direction of the properties of the several constituents, not all of these having yet been isolated. The following is the botanical history of the drug:

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* This series of articles appeared originally in the *Brooklyn Medical Journal* of July, 1893, but we consider them of sufficient importance to occupy a position in this department of the BULLETIN to the exclusion of a certain amount of strictly original matter.—ED.

It belongs to the natural order *meliaceæ*, a small family of some forty genera and three hundred species, frequent in the warmer parts of Asia and America, a few in tropical Africa. Its only representative in the United States is the *melia azedarach*, or China-tree, sparingly escaped in the Southern States, where it is extensively cultivated as a handsome and fragrant small ornamental tree, the flowers somewhat resembling the lilac of our gardens. The members of this order are all trees or shrubs, a few very small, resembling herbs, but not really so.

From an economic point of view the family is notable because it yields mahogany and various precious mahogany-like woods. It also yields the "red-cedar" of the tropics. This is not the juniperus or red-cedar of our hills, but the cedrela, a totally different plant. It yields the wood which enters into the manufacture of our lead-pencils, and in many sections where it grows it is almost the only soft wood available for building and other purposes wherein we use pine.

From a medical standpoint the family is also very interesting because of the numerous medicinal plants which it contains, and especially because these are credited with properties showing a strong degree of uniformity, thus tending to verify and strengthen the conclusions reached. As a general characterization, the medicinal plants of this family may all be placed in the ipecac group. Concerning this very large group I published a study in the *New York Medical Journal* of Feb. 11, 1893, wherein I reached the conclusion that among them all, those of the *meliaceæ* are the most typically representative of the properties of ipecac. The only one of this family generally known to scientific medicine is the *azedarach* before mentioned, which, though used as an anthelmintic, possesses distinct emetico-cathartic properties.

Others which are more or less extensively used by the inhabitants of the several countries where they respectively grow, are as follows: The *walsura piscidioides*, of India, used as a fish-poison like *cocculus Indicus*, and a powerful emetico-cathartic poison as applied to man. There are several species of trichilia, which act very similarly indeed to cocillana, and which, by the way, seem to me to be much more closely related botanically to the guareas than is indicated in the grouping given by Messrs. Bentham and Hooker in their great "Genera Plantarum." The *naregamia alata* of India has received the name of "goanese ipecac" because of its very similar properties. It is most interesting that the properties of this plant, so far as can be judged from published descriptions, are almost identical with those of cocillana. Yet it was investigated entirely independently, even without knowledge of the properties or uses of cocillana. It is always a strong point in the case of any group of plants that, investigated independently and in regions remote, they should acquire a repute for the same properties. Lastly, we note that guarea, to which genus belongs cocillana, possesses several species which are credited with more or less similar properties. Two different species, the one of Brazil, the other of Guiana, have received from different authors the name *G. purgans*. This name indicates that these tend rather toward purging than toward nausea, while of cocillana the opposite is true.

Notwithstanding early misconceptions of the botanical nature of this plant, its present reference to this family and genus is correct beyond doubt or question. As to which species of the genus it is, we are unfortunately not so well assured. There are some thirty species in the genus, all South American and West Indian, except perhaps one which is credited to Africa. To indicate the relative diagnostic values of the different structural characters as understood by Casimir De Candolle, who has monographed the South American species in the "Flora of Brazil," I append the following partial analytical key, which in its main features represents the ideas of that distinguished botanist:

Flowers tetramerous, 1.
Flowers pentamerous, 2.

1 Ovary hirsute, 3.
Ovary glabrous, 4.

3 Panicle peduncled, 5.
Panicle sessile, 6.

5 Panicle much branched, 7.
Panicle nearly simple, 8.

7 Petals densely silky outside, 9.
Petals nearly smooth outside, 10.

9 { Leaves glabrous both sides, 11.
Leaves pubescent underneath, 12.

11 { Bud oblong, 13.
Bud ovate, 14.

But Sections 13 and 14 are farther than we can go in the classification of our plant, because its bud is neither oblong nor ovate, but intermediate between the two forms. As regards this classification, I desire to remark that it is very doubtful whether the characteristics which are here treated as fundamental are really possessed of the greater diagnostic value. Those of you who are experienced in systematic botany or zoölogy will appreciate that in different families or genera characters of the same class do not agree as to their possession of a superficial or a fundamental value in classification; and that it is necessary to gain an extensive knowledge of the group before we can decide what amount of reliance to place upon any special class of characters. Regarding guarea we have not yet accumulated this amount of knowledge, and for my own part I regard all present attempts at classification as being tentative merely.

So soon as the reference of the plant to this genus became established, its striking similarity to *G. trichilioides* became apparent, and as there were no external differences sufficient to separate it from that species, and as the minute characters of that species had never been determined, or at least published, it was provisionally regarded as belonging there. Since that time, however, I have carefully dissected both species and noted ample structural differences, in my opinion, to separate the two. A synopsis of these differences is here presented:

G. trichilioides.	*Species Yielding Cocillana.*
Petiole 3 to 5 cm. long.	Petiole 5 to 8 cm. long.
Panicle nearly as long as the leaf, very loosely and distantly flowered.	Panicle averaging not more than one-third the length of the leaf, in fact but little longer than the petiole, rather densely flowered.
Branches of the panicle shortly but distinctly peduncled.	Branches of the panicle sessile.
Flowers on pedicles of one-third their length.	Flowers not pedicelled.
Calyx 3 mm. broad, only one-half as long, the border standing very distant from the narrow base of the corolla tube.	Calyx 2 mm. broad and about equally long, rather closely encircling the broad base of the corolla tube.
Lobes of the calyx semi-circular, or even broader than long, regularly rounded in outline, sometimes 2-dentate.	Lobes of the calyx broadly triangular-ovate, acute.
Corolla-bud oblong, at least the lower two-thirds narrow, not red, more sericeous than in the other.	Corolla-bud ovate or ovate-oblong, the lower portion stout, dark red, less sericeous.
Petals 7½ mm. long, the inner surface showing no prominent nerves.	Petals 4½ mm. long, the inner surface showing three strong, dark nerves.
Stamen tube 6½ mm. long, one-third as broad, cylindrical, adnate to the corolla, at least in the bud.	Stamen tube 4 mm. long, one-half as broad, campanulate, always entirely free from corolla.
Anthers longer, and proportionately broader, than in the other.	
Gynobase longer than ovary.	Gynobase and ovary of equal length.
Gynobase and pistil together 8 mm. long.	Gynobase and pistil 4½ mm. long.
Pistil proper 4½ mm. long.	Pistil proper 2½ mm. long.
Style twice as long as the ovary.	Style only two-thirds the length of the ovary.
Fruit globoid, with an indistinct narrowed base.	Fruit pear-shaped, with a conspicuous narrowed base.

It may, therefore, be taken as established that the plant is not of the species *G. trichilioides.* There are, however, several other species between which and it a distinction is not clearly proven by published descriptions, and of which there are no specimens in this country. Although it is reasonably certain that it is distinct from all those, this question cannot be absolutely pronounced upon until I shall have had an opportunity of making comparisons abroad during the coming summer.

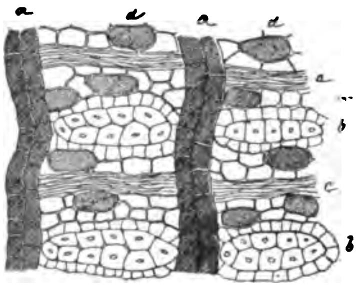
A full botanical description of the plant will read as follows: A tree of some 12 m. in height, broadly branched from near the base, reaching an extreme trunk diameter of nearly 1 m., the ultimate branches erect; wood rather soft, covered with a thick ash-colored bark, which becomes rough only in age; leaves somewhat erect-clustered at the ends of the branches, imparipinate, 5 to 7 dm. long by 3 to 4 dm. broad, broadly oblong in outline, the petiole 5 to 8 cm. long; leaflets opposite, from seven (rarely so few as five) to ten pairs, short petioled, oblong, somewhat obtuse at each end, entire, 15 to 20 cm. long by 5 to 6 cm. wide, smooth on both sides when mature, principal veins about eleven to fourteen on each side; panicles axillary, once compound, or one or two of the lower branches also compound, 25 to 30 cm. long by 5 to 10 cm. wide at the base, peduncled, the peduncles forming about ⅙ of their length, rather densely flowered for the genus, the branches and flowers sessile; flowers perfectly 4-merous; calyx coriaceous, 2 mm. high and about as broad, rubescent, hoary-tomentose, the lobes broadly triangular-ovate, acute, unequal; corolla in the bud oblong-ovate, slightly angled, rubescent, sericeous upon the outside, apparently never opening except at the apex, near which the petals are apparently circumscissile, the upper portions separating at the line of the summit of the stamen tube; petals 4½ cm. long, thick internally, dark red and smooth, showing three dark veins; stamen tube 4 mm. long, one-half as broad, campanulate, always free from the corolla, thick, strongly, many striate, minutely hoary, slightly 8-crenate; the anthers sessile, alternating with the lobes, oblong, ⅔ mm. long; gynobase blackish, nearly as long and broad as the white silky ovary, the apex broader than the ovary; gynobase and pistil 4½ mm. long, the pistil proper 2½ mm. long, densely hirsute; ovary 4-celled, the cells apparently 2-ovuled; style two-thirds the length of the ovary; stigma peltate, about as broad as the ovary, above indistinctly 4-grooved; fruit fig-shaped, the narrowed base conspicuous, about 3 mm. long by ½ broader, the main body of the fruit globose, the apex flattened slightly, about 15 mm. broad, about 2 cm. in diameter, apparently indehiscent, not castate nor sulcate, of a rich brown color, somewhat roughened and marked by numerous irregular light-colored spots, texture ligneous.

PHARMACOGNOSY.—BY H. H. RUSBY, M.D.

In accordance with the advice of the natives, only the thicker bark, from the trunks and larger branches, has been collected, and only this is here described. That the natives are correct in their opinion is not certain, but very important clinical results obtained in treatment have resulted from this bark, so that its value is well established. Prof. Joseph Schrenk, now deceased, made the first pharmacognostical examination of the bark, and to his general description there is little to add. His figures, however, failed to exhibit some important characteristics, and I have had new ones drawn for this study.

Bark of low specific gravity, soft and loose in texture; occurring in irregular fragments, varying from a dm. or less, to 5 dm. in length, and from 2 to 10 or 12 cm. in breadth; 5 to 15 mm. in thickness, the thickness, at least in the older bark, about equally divided between the corky and the fibrous layers, or the cork a little thicker; outer surface varying from an ashy-gray to a somewhat blackish-gray, and with a tawny or light orange-brown tinge, marked by large silvery-white lichen patches, in which occasionally small bright yellow spots may be seen; deeply, coarsely and irregularly longitudinally fissured and with a few distant and very fine transverse fissures, apparently produced in drying; the corky layer is internally of a deep reddish rust-brown, the transverse section marked by scattered small whitish spots, and its fracture is granular; inner surface dingy yellow, with a light, but distinct, rusty shade, coarsely striate and roughish, with detached broad bands of bast-fibres; fibrous layer yellowish white, obscurely tangentially yellow striate, its fracture long and coarsely splintery; odor slight but peculiar, a little nauseous, and on strong and prolonged exposure sternutatory; taste slightly bitter and nauseating. For a description of the microscopical appearances, I cannot do better than to quote form Prof. Schrenk, DRUGGISTS' BULLETIN, 1888, p. 222:

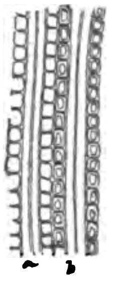
"On cross and longitudinal sections the periderm is found to consist of one or several layers of primary, and frequently even of secondary bark separated from the deeper, living tissues by broad bands of cork. Large groups of sclerenchyma cells with very much thickened, porous walls are seen in the periderm and the other parts; their number diminishes toward the interior, and in the inner half of the bast portion they are met with only very sparingly.



—Drawn by R. Webber.

FIG. 1.—Transverse section of Inner Bark: *a a*, medullary rays; *b b*, bundles of bast-fibres surrounded by crystals; *c c*, sieve-tissue; *d d*, large cells containing a peculiar substance.

"The bast-cells are arranged in strictly tangentially elongated groups (as seen on the cross-section), but there are no radial rows, therefore the medullary rays are not so readily distinguished with the unaided eye as in some other barks. They invariably make considerable curves where they enter the zones of cribrose and parenchyma tissue, which alternate with those of the bast-fibres, and as they contain a red-colored substance they can easily be traced under a low power as undulating red lines. On tangential sections they appear very distinct as narrow ellipses made up of from one to three horizontal, and up to twenty vertical rows of cells. Where these rays pass through parenchyma tissue they are frequently bounded by vertically elongated, rather wide cells, distinguished by the fibrous thickening of their cellulose walls. They form a prosenchyma-like tissue, for in each vertical row of (from five to ten) cells the two terminal ones are pointed.



—Drawn by R. Webber.

FIG. 2.—Two Bast-Fibres, supported on either side by crystal-sacs; *b*, crystals in place; *a*, crystals removed by hydrochloric acid.

"The bast-cells are slender and straight, at an average of 0.75 mm. in length. Each liber bundle is accompanied by rows of cells with very much thickened, lignified walls, each containing a large calcium-oxalate crystal (of the monoclinic system) entirely filling the interior of the cell, so that when the crystal is removed by the application of hydrochloric acid an exact mold of it is left. So closely are these rows of 'crystal-sacs'* applied to the bast-fibres, that the latter can be brought to view on longitudinal sections only with difficulty. Calcium-oxalate crystals of the same form are also seen in other cells, especially in the proximity of the stone cells. Small, rounded, simple starch-grains are rather abundant in the parenchyma, and in the cells of the medullary rays can be noticed the red-colored masses mentioned above, which are insoluble in alcohol.

"Many of the elongated parenchyma cells of the liber are almost entirely filled with a yellowish-white, amorphous, sometimes slightly granular substance. It resists alcohol as well as the mineral acids and the alkalies. Even chromic acid, which quickly destroys the walls of the cells containing these masses, so that they float about in the fluid, changes them only slightly, causing them to assume a granular appearance. Osmic acid colors them dark-brown, alcanna tincture red, and Schultze's solution (chloro-iodide of zinc) bright orange. Turpentine and chloroform were found to be ready solvents of this substance, so that it might be considered a kind of latex, related, perhaps, to the resinous secretions furnishing gutta-percha and caoutchouc, and the isolated secretory cells may be placed in the class of latex-cells, until more thorough investigations give us definite information about their nature.

"I merely throw out the suggestion that some active principle might be contained in this latex, in analogy with opium, euphorbium, jalap, etc.

"A small quantity of the bark was treated with chloroform, which, after evaporation, left behind a yellow, viscous, resinous substance that has the peculiar, but much intensified, odor and taste of the bark. Chemical and pharmacological investigations will be necessary to reveal its nature and determine its medicinal value."

CLINICAL HISTORY AND THERAPEUTICS OF COCILLANA—

BY REYNOLD WEBB WILCOX, M.A., M.D., LL.D.

In May of 1889 I commenced a clinical study of this, at that time, new drug. In December of that year I read a paper upon the results of my clinical work before the Academy of Medicine, which was published in the *New York Medical Journal* of the same month. During the time that I was making my observations, Stewart was pursuing the same line of study. Shortly afterwards Mettler published his paper. The literature, then, is chiefly to be found in the work of Rusby, Stewart, my own paper, and the later papers of Mettler, Eckfeldt, and Shoemaker.

The preparations which I have employed have been: A concentrated tincture of the bark, the dose varying from ½ fluidrachm to 2 fluidrachms, administered every two to eight hours; a fluid extract, which I have used in doses of from 5 to 25 minims, every three to six hours, and which I think is preferable, in many cases, to the concentrated tincture on account of the absence of alcohol. Within the past three weeks I have experimented with a syrup which contains all the active principles of the bark except the resinoids and possibly a glucoside, if present, which are removed by precipitation by water from an alcoholic solution. The dose of the latter has been 1 to 2 fluidrachms every four to six hours.

The symptoms which are noted when the drug has been given in the crude state, that is, in the form of a powdered bark, are the production of nausea and a desire to vomit, with a metallic taste in the mouth, within about a half-hour after its administration and lasting an hour, the nausea being accompanied by an early discharge of mucus and afterwards by dryness of the throat. These symptoms, so far as the throat is concerned, are not marked after the administration of either the fluid extract or the concentrated tincture. I think that the syrup produces this discharge of mucus, but not to such an extent as the crude drug. Presumably, these symptoms are of the same nature as those produced by ipecacuanha, which is locally irritating in that it increases secretion from parotid glands, mucous membrane of the nose, mouth and pharynx. The drug given in any form will sometimes produce a slight headache, rarely slight dizziness, although these symptoms do not appear with any great frequency. There is, with large doses, a desire to defecate, which, however, may be restrained. This symptom is by no means so well marked with the syrup as with the other preparations. From this fact I infer that the resinoids extracted may contain the purgative properties of the drug. There is frequently a slight increase of perspiration; there is a considerable stimulation of vessels and glands, more especially the glands of mucous membrane of the bronchial tubes and of the digestive system. This stimulation, which shows itself by increased secretion, lasts for several hours and is quite likely to be due to the elimination of the drug by way of these tracts. The leading indication for its use is a hyperæmia of mucous membrane unaccompanied by secretion. The cases in which I have used this remedy can be provisionally divided into three classes: those of acute bronchitis, those of subacute and chronic dry bronchitis, and those of chronic disease of pulmonary tissue.

In each one of these three classes of cases, I believe we find a very excellent reason for the use of cocillana in preference to many so-called expectorants. In the first place, I regard it as a valuable substitute for ipecacuanha, and not only a substitute, but a drug that is in the vast majority of cases to be preferred to ipecacuanha. So far as I have been able to discover from an extended series of laboratory experiments, with the exception of a very few remedies, the expectorant effect of these remedies is simply an early stage of the emetic effect. In the case of ipecacuanha the distance between a purely expectorant result and an absolutely emetic result is by no means a long one, and the use of ipecacuanha to obtain one or the other effect is simply a question of dose, and that, too, a dose not defined by hard and fast lines, but depending largely upon the peculiarities and idiosyncrasy of the patient. Now, what is true of ipecacuanha is true of a very large number of drugs of that class. On the other hand, with cocillana, the expectorant effect seems to be entirely separate from its purely emetic effect; for, with commencing expectoration, you do not obtain that relaxation of peripheral blood-vessels, that slight perspiration which so frequently accompanies an effective expectorant dose of ipecacuanha. On the other hand, for all that vomiting can be produced by an excessive dose of cocillana, it is only by its injudicious exhibition that we ever obtain this phenomenon, although I am free to say that vomiting, if obtained by cocillana, is extremely persistent, is accompanied by an abominable taste in the mouth, and is thoroughly prostrating; but the difference in doses is so great that these symptoms could only be obtained by the greatest carelessness. With the syrup which I have been using of late, a decided expectorant effect can be obtained with one or two drachms; emesis was only produced when two ounces had been taken at a single dose.

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* "Cf. the crystals in the liber of Frangula, Ulmus, Quillaia, etc."

As compared with the action of apomorphine, I believe cocillana presents certain advantages. The experiments that have been performed by many observers, including myself, show that expectoration in rabbits and cats follows uniformly the administration of a dose of apomorphine; the trachea, when opened half an hour after a hypodermatic injection of this remedy, is found to be filled with frothy mucus; the mucous membrane is seen to be pale, the blood-vessels hardly visible. On the other hand, with cocillana the expectoration, although not quite so profuse, is a trifle more viscid, and it seems fair to conclude that while apomorphine depletes the blood-vessels and removes serum from submucous tissues, cocillana stimulates the muciparous glands to action. There is a difference in time also, apomorphine acting within a half to one hour, cocillana being somewhat more slow, three to six hours being usually required. The expectorant effect of apomorphine passes off within two or three hours at the outside, thus necessitating frequent doses; while expectoration once established by cocillana, persists usually for from four to six hours, the longer intervals of administration for cocillana being a decided advantage; and so far as the expectoration goes, the teasing cough and the sense of stuffiness are, I believe, better relieved by cocillana, with its somewhat thicker expectoration, than by apomorphine, with its purely watery secretion. So, in cases of acute bronchitis that are seen before forty-eight hours of the disease have elapsed, apomorphine will relieve more quickly; but in cases seen for the first time at a late period, I would prefer cocillana. I have not found that the rhythm of the respiratory act was affected, only so far as freer expectoration lowers the respiratory rate. That the expectorant effect of cocillana is not the first stage of nausea, is shown by the fact that an increase of appetite is usually observed even under full physiological doses, and, contrary to what we find with ipecacuanha, there is no change in the fullness of the pulse. In cases of acute bronchitis, also, the laxative effect of cocillana is valuable.

In cases of chronic bronchitis, especially of the dry variety, I believe we find a larger field for the use of cocillana. Its expectorant effect is certainly surer than that of either apomorphine or ipecacuanha in liquefying bronchial mucus. It is better for continued administration because it increases the appetite, not because the drug itself acts like a simple bitter or its menstruum (alcohol) irritates the stomach, for the fluid extract and syrup are equally reliable in that direction, but because the drug is, as I have said before, a laxative, probably from stimulation of the intestinal muciparous glands. The increased number of movements of the bowels are not characterized by pain or tormina, but are simply movements increased in amount and of greater fluidity. The laxative effect of the syrup is by no means marked as compared with that of the concentrated tincture or the fluid extract. The expectoration is not so much influenced by warm diluent drinks as is that of apomorphine, ipecacuanha, or carbonate of ammonia, although the drug itself may produce a slight perspiration. In chronic bronchitis with viscid expectoration, cocillana will render the sputum liquid somewhat more surely than ipecacuanha, and it has the further advantage of not causing nausea. After continued use it seems to check the formation of mucus, either from sedation of the muciparous glands through over-stimulation, or, from more rapid expectoration, opportunity for decomposition is prevented and its irritating properties thus are not acquired. However, in cases of senile bronchitis, particularly in cases of calcified costal cartilages, it may so markedly add to the bronchorrhœa that it becomes absolutely dangerous, and particularly because it is not a stimulant to the respiratory centre like belladonna and strychnine. It is, however, just to say that a recent observer believes it to be a respiratory stimulant as well, although I have never been able to satisfy myself that such is the case. In these cases, then, it is useful only so far as it liquefies secretion. Although this is a limitation in the field of its usefulness, it is not one that we need deeply regret, because in a case like this, and especially where we have a dilated right heart, we get such brilliant results from a combination of strychnia and carbonate of ammonia.

In cases of chronic disease of pulmonary tissue, cocillana has almost its own use in liquefying secretion and relieving the acute exacerbations of the associated chronic bronchitis. Since the use of this remedy is likely to be persisted in for a number of months, its effect upon the appetite and upon the bowels should cause it to be preferred to any of the ordinarily used drugs. The cough and expectoration diminish, probably for the reasons given above, and, as a consequence of removal of the opportunity for auto-infection, night sweats are likely to diminish.

In order to get the best effect from cocillana, a careful diagnosis is necessary, and, indeed, a diagnosis based to a considerable extent upon physical signs; for when the cough is due to pleuritic exudation, or is laryngeal or pharyngeal, cocillana, in common with all other expectorants, will fail.

In conclusion, I believe cocillana to be superior to apomorphine, except in cases of acute bronchitis when taken within the first forty-eight hours. It is certainly preferable to ipecacuanha, in that it does not so readily cause nausea and a metallic taste in the mouth, and that it improves the appetite and assists in the regular movement of the bowels. It must yield to carbonate of ammonia in chronic senile bronchitis, although the heart-beat and the pulse become stronger under its use, and it cannot stimulate the respiratory centre as strychnine does. It is immeasurably safer in any stage of acute bronchitis than pilocarpine, because it does not depress the heart action. I believe it can fully replace ipecacuanha, which is now becoming expensive from exhaustion of the supply, in every sphere of action, and in a very large number of cases it can be substituted with advantage for apomorphine, carbonate of ammonia, strychnine, and other drugs classed with more or less reason as expectorants. In the four years which have elapsed since my studies of this remedy commenced, I have formed a more and more favorable opinion of the value of this drug in the class of cases which are specified above. I am firmly of the opinion—and this is based upon the study of a large number of cases of diseases of the respiratory organs that come under my observation in public service—that cocillana is a remedy that will be received with lasting favor by the medical profession.

⁂

Discussion.

Dr. R. W. Wilcox: I wish to say first, Mr. Chairman, that I appreciate very highly the honor of addressing this Society, for as a student of medical literature I am familiar with the work done in this City of Churches. I appreciate your work for the Society in the *Brooklyn Medical Journal*, and, beyond the interest that a practical man has in it, I feel that the work that is being done in that journal in the way of acquainting the younger members of the profession with the Fathers, is one that should be emulated by all our medical writers.

Dr. Eccles: I am sorry Prof. Coblentz is not here. I was anxious to hear his report on the chemistry of the subject, and, as he has not come, I thought Dr. Rusby would give us that. I understand Prof. Coblentz has discovered two resins, the red and the white.

Dr. Rusby: The red resin is not regarded as a discovery. It is a resinous substance which is precipitated from the fluid extract on addition of water. An alkali does not dissolve it. In addition to this he has found crystals which possess to a certain extent the characteristic taste and odor; he has also an oleo-resin which more markedly possesses the characteristics of the drug. These he had not purified when I saw him. Prof. Coblentz was ill two or three days last week, and I was also sick and only saw him for a few moments to-day; that is the reason I am not able to answer the question more fully. He finds also evidences of a glucoside.

Dr. Eccles: On Feb. 25th I was first informed that Dr. Rusby was going to present this paper, and immediately proceeded to examine chemically some extract of cocillana. Only a small amount was in my possession. Part of it was used as an expectorant, and in the few cases tried it seemed to work like a charm, relieving ordinary cough and acute bronchial troubles. In the matter of its chemistry, duty compelled me to desist from work before much had been done. I, however, succeeded in discovering a few points of interest. The white resin I failed to isolate, but saw it was there by the action of the reagents. The red resin in combination with the white resin, in fact the entire resinous mass, exclusive of a substance to be spoken of hereafter, is in the bottom of this beaker. The peculiar odor of the cocillana can be recognized therein. An alkaloid was found having some distinctive properties. It is of a light straw-yellow color, so far as procured in a nearly pure state. It appears, very likely, in connection with some organic acid. The isolation of the acid would be difficult, and I had no time to undertake it. A hydrochloride of the alkaloid was produced, and found like its base to be somewhat resinous in appearance, but could not be crystallized; several attempts were made, but each failed. It is insoluble as an alkaloid in water. The hydrochloride is soluble in water, and quite so in acid solutions. These solutions are precipitated in dense flocculent masses by Mayer's reagent. It is also precipitated by solutions of tannic acid and of sodium molybdate. The color reaction with strong hydrochloric acid is negative; neither is there any color with strong nitric acid. Sulphuric acid gives a brown color, shading to red. With sulphuric acid and sugar there was no change from that of sulphuric acid alone, neither did bichromate of potash alter it. The only color reaction was that of the straight sulphuric acid. I intend to see whether it resembles *emetine* by trying it with chloride of lime. As the drug is somewhat related to ipecac, it might give a similar color reaction. The name I suggest to-night for the new alkaloid is "rusbyine." It is customary to give the first alkaloid found in a plant the name of either its species or genus. I believe that this species has been named "rusbyi" by Dr. Britton. I think it will therefore be proper to call the alkaloid "rusbyine." What other constituents the plant may contain I cannot say, not being able to go any further with the work. This is the first mention of the existence of this alkaloid that has been made, and the *Brooklyn Medical Journal* will give the first account of its discovery. It had the first report of the alkaloid calycanthine, which I found a few years ago. On the edge of this evaporating-basin you will see a small amount of this latest alkaloid.

Dr. Raymond: Mr. President, is this drug obtainable in the drug stores ordinarily?

Dr. Eccles: Quite a number of them keep the fluid extract.

Dr. Kent: I would like to ask Dr. Wilcox if any experiments have been made with the hypodermic injection—whether systemic effects would be produced by throwing it into the circulation, other than by the stomach.

Dr. Wilcox: No attempt has been made in that direction—for this reason, that the different principles had not, at the time my earlier experiments were made, been isolated, and we were waiting for the chemist to catch up with the therapeutist. Now it is in order for the therapeutist to make a little more definite statement in regard to it. We have gone a step further of late and separated the expectorant properties from the emetic and purgative, and now very shortly we will be able to say how far the new alkaloid represents the expectorant and emetic properties of the drug.

The President: Is there any gentleman present who has used the drug?

Dr. Macumber: I am reluctant to make any remarks, but I have used the drug somewhat. I used Parke, Davis & Co.'s fluid extract, in doses of 15 to 20 drops every four hours, and I found it a very useful expectorant in subacute and chronic bronchial troubles. It establishes secretion in a short time, and the secretion is usually very healthy in appearance.

Dr. Rusby: I have nothing further to say, Mr. President, except to mention an idea in regard to the physiological effects of the drug so far as the production of mucus is concerned. The inhalation of the dust produces sneezing and irritation and very much the same symptoms as the inhalation of the dust of ipecac. This suggested to me the thought that possibly the local application of some fluid preparation of the drug in the form of a spray to the throat would be found useful by the laryngologists.

Dr. Kent: I would like to inquire whether after large doses of this drug the stools exhibit any such characteristics as we see after ipecac; what is the effect in that respect?

Dr. Wilcox: The only differences I have noticed in the stools are those mentioned in the paper, namely, that they are larger in amount and more fluid than ordinary stools. I have noticed no change in the color, or anything unusual in the odor other than arises from increased peristalsis. The drug stimulates the muciparous glands of the intestines to action, causing the stools to be larger and more fluid. Beyond that I have nothing which I could state definitely.

When used as an expectorant the following is the form of prescription:

℞ Extracti cocillanæ fluidi, }
Extracti lippiæ Mexicanæ fl. } āā . . ℥ ss.

S.: Thirty drops in wineglass of water every four to six hours.

EXAMINATION OF COCILLANA—BY VIRGIL COBLENTZ, A.M., PH.G., PH.D.

Five hundred grammes dry, finely pulverized drug was exhausted with hot benzol until it yielded no further residue. From this extraction, most of the benzol was recovered by distillation, the syrupy product transferred to an Erlenmeyer flask and evaporated at a gentle heat till it ceased to lose weight and benzol was removed.

Benzol Extract 24.95 Grammes.

This extract was of greenish-gray color; while still in flask it was connected with well cooled condenser, placed on boiling water bath, some water (acidulated with tartaric acid) added, and then steam was blown through the flask as long as the distillate contained any oily globules. At conclusion of distillation the condenser was found to be incrusted with crystalline masses; these were washed out and recovered from it, as well as the distillate; further portions were recovered on extraction with ether.

This white crystalline body was recrystallized from alcohol several times, yielding hexagonal plates (0.65 gramme). This substance is very soluble in ether, chloroform, alcohol, ligroin, acetic ether, glacial acetic acid; insoluble in alkalies; acids gave no color reactions. Heated with water it melts to oily globules which congeal on cooling; has peculiar aromatic taste. After drying over phosphoric oxide it melted at 80° C. sharp. When heated above this temperature it sublimes, yielding white flaky crystals. From its deportment this body belongs to the so-called "camphor-like" bodies, or, more properly, solid hydrocarbons, such being peculiar to the phlox species. A further examination of this body will be made in the future.

The aqueous acid distillate, after removal of the hydrocarbon, was tested for alkaloids with Mayer's and other reagents, indicating presence of traces. The precipitate produced by Mayer's reagent was collected and reserved for further use.

The residue in the retort after distillation, freed from water, weighed 24.3 grammes; was a pale greenish, brittle, resinous mass. This was dissolved in small quantity of chloroform and then poured into large excess of alcohol with constant stirring; a white resinous powder precipitated, leaving the alcohol of pale greenish color; the resin was filtered off and washed with alcohol to remove adhering oil. For further purification the resin was again dissolved in small amount of chloroform and precipitated in alcohol. The alcoholic solutions on evaporation yielded 12.5 grammes of a greenish-yellow fixed oil. This fixed oil had a pungent, acrid taste and earthy-like odor; soluble in ether, chloroform, alcohol, turpentine, etc.; left a permanent greasy stain on paper; saponified readily with weak soda. With nitrous acid yielded elaidin. It is therefore a non-drying fixed oil.

The resin obtained as above (11.8 grammes) was a white impalpable powder, melting at 122° C. to clear yellow liquid. This resin on melting and cooling leaves a transparent brittle mass of pale straw color, tasteless, inodorous, soluble in chloroform, ether or turpentine, insoluble in alcohol, dilute alcohol, boiling aqueous caustic potash, soluble in large excess of boiling alcoholic potash, reprecipitated again on addition of an acid. No action in cold by any of the acids; on prolonged boiling with nitric acid remained unaffected. Fusing with caustic potash produced no action. From its reactions it might be classed as an indifferent resin.

80-per-cent. Alcoholic Extract.

Complete exhaustion yielded 9.4 grammes dry extract. This on treatment with absolute alcohol left behind 2.7 grammes insoluble residue consisting of caoutchouc and gummy matter.

The alcoholic extract was concentrated to small bulk and poured into excess of ether, agitating, then allowed to deposit insoluble portion; the ether having become clear was decanted, and the precipitated mass well washed with ether.

Insoluble in Ether.

The brown-colored extract was dissolved in water and precipitated with subacetate of lead. The precipitate was suspended in water, and lead removed with H_2S, filtered and heated; this solution gave greenish-black coloration with ferric chloride, precipitatad with solution of gelatin and reduced ammoniacal silver nitrate, indicating the presence of a tannin-like principle; from the reactions obtained there can be but very small amount present, hence no estimation was made. This same solution also readily reduced Fehling's solution and the bismuth test solution on warming. The filtrate from lead precipitate was freed from excess of lead, heated to remove H_2S; this showed the presence of glucose by Fehling's and bismuth test.

The above solutions were tested for alkaloids with negative results.

Soluble in Ether.

An alcoholic solution of this extract is poured into water acidulated with HCl, yielding a brownish resinous precipitate. This is filtered off and well washed. This resin (0.8 gramme) is readily soluble in ether, chloroform, benzol, alcohol, dilute NH_3, precipitated by acids, of intense bitter acrid taste reminding one of the taste of the crude drug.

The acid filtrate, which is of deep red color with greenish fluoresence, was shaken with ether, chloroform, and benzol, without yielding any appreciable residue; it was then made alkaline with ammonia (alkali intensifies the color) and again shaken with several portions of ether, yielding on evaporation an impure residue, which on resolution in acidulated water and reprecipitation yielded 0.012 gramme residue, which possessed many characteristics of an alkaloid. With the amount obtained from the benzol extract gave 0.014 gramme. The usual alkaloidal reagents, as Mayer's, Lugol's, potassio-cadmic iodide, auric and platinic chloride, tannic acid, picric acid, all gave distinct reactions. With picric acid, microscopic crystals were obtained, but all other salts refused to crystallize. The quantity being too small precluded a test for nitrogen, so at present we will call it an alkaloid.

It was presumed a larger yield might be obtained from the plant direct. By exhaustion with alcohol acidulated with tartaric acid, evaporating, treating with water, removing color and extractive with ether, then making alkaline and exhausting with ether, the alkaloidal residue purified gave me 0.015 gramme amorphous alkaloid, from 500 grammes drug.

I hope in future, by working with larger amounts of the drug, to obtain sufficient quantity of this principle to identify it definitely and give something about its composition and properties.

The highly colored alkaline liquid remaining after the extraction of the alkaloid, was concentrated on water bath. During the evaporation deep crimson-colored drops condensed on sides of beaker; the liquid was transferred to small flask and distilled. The first few c. c. were of crimson color, unaffected by acids and intensified by alkalies; could not abstract it by means of any volatile solvent; on evaporation in open air it was entirely dissipated. The solid extract remaining on treatment with alcohol to remove salts consisted of inert extractive.

Distilled Water Extract.

Yielded 5.76 per cent. aqueous extract, consisting of starch, mucilage, dextrin, glucose.

Dilute Soda (0.2 per cent.).

Yielded 3.21 per cent. extract, consisting of albuminoids and extractive.

Dilute Hydrochloric Acid.

Extract 1.1 per cent. containing extractive and calcium oxalate.

Lignin 5.84 per cent. Ash 2.65 per cent. Residue.

Quantitative estimation was made of only those constituents which are of importance among plant products, which are likely to play a part in their medicinal value.

The balance of the constituents, as starch, mucilage, albuminoids, extractives, etc., are common to most plants and are of no interest or value.

Summary.

		Per Cent.
Benzol ext.		4.99
Solid hydrocarbon	0.13	
Fixed oil	2.50	
Resin	2.36	
80-per-cent. alcoholic ext.		1.88
Resin, 0.16 per cent., alkaloid, tannin, glucose.		
Distilled water ext.		5.76
Starch, mucilage, dextrin, glucose.		
Dilute soda		3.21
Extractive, albuminoids.		
Dilute hydrochloric acid		1.10
Extractive, calcium oxalate.		
Lignin		5.84
Ash		2.65
Moisture		9.72
Residue		64.85
		100.00

ANSWERS TO CORRESPONDENTS.

I. E. S. (La.).—The seeds you send under the vernacular name of Mamou are probably those of *Erythrina Corallodendron*, Lin. We take note of what you state with regard to the sedative and vermifuge properties of the plant

H. R. S. (Bahamas).—*Colubrina ferruginosa*, Brongn., is commonly called Snakeroot in your island, but we are not aware what part of the plant is used, whether it is the root or the wood. It has been claimed to be, and brought previously to our attention as, a febrifuge remedy of some efficacy, and as a diuretic. We know very little, however, of the other properties to which you call attention—that is, as to its use as an aphrodisiac—and there is nothing recorded in this direction.

ADONITE.

A crystalline principle has been isolated from *Adonis vernalis* by Merck, and to this has been given the name adonite. This was subsequently examined by E. Fischer, who ascertained it to be a pentahydric alcohol of the formula $C_5H_{12}O_5$; upon oxidation a sugar is formed. This compound had been produced artificially by the same experimenter from ribose. The other known pentahydric alcohols are arabite and xylite, both produced by artificial means, adonite being the first one which has been found naturally.—*Western Druggist.*

To Remove the Odor of Iodoform from the Hands.

B. S.—Washing the hands thoroughly with Johnston's ethereal antiseptic soap will effectually remove therefrom the odor of iodoform. Owing to the antiseptic properties of the soap, the hands will require no further washing, being left in a thoroughly aseptic condition.

Artificial Gum Arabic.

J. E W.—Artificial gum arabic is made by boiling 10 kilogrammes linseed with 80 kilogrammes sulphuric acid and 100 liters of water for three or four hours. Filter the liquid, and add four times its volume of alcohol. The precipitate is collected, washed, and dried. The product is colorless and insipid. With water it yields a thick mucilage. This is according to the *Rev. de Chim. Indust.*

Lanain.

E. M. W.—Lanain is a soft, yellowish, homogeneous mass, and, according to the patent, is a pure neutral wool-fat. Lanain melts at about 36° C.; has a faint odor, which it loses after standing some time; is perfectly neutral and permanent in air. It is miscible with as much as four times its weight of water, forming a white smeary ointment.

Like lanolin, lanain is quickly absorbed by the skin, and is offered as a substitute for the different fats in the preparation of ointments, pomades, etc.

Vitriolic Air.

W. H. M.—Vitriolic air, subsequently "fire air," was the term applied by Scheele to oxygen upon its discovery by him.

Until recently the priority of the discovery of oxygen was credited to Priestly, but according to Von Nordenskiöld, who has written a memoir on Scheele, oxygen was obtained by Scheele by various methods and accurately described by him in the latter part of 1771 or early in 1772.

This great discovery, which revolutionized the chemical science of that day, remained dormant until 1774, when it was made public by Priestly.

Cleansing Old Corks.

B. F. N., Toronto.—Old corks may be cleansed by subjecting them to the following process:

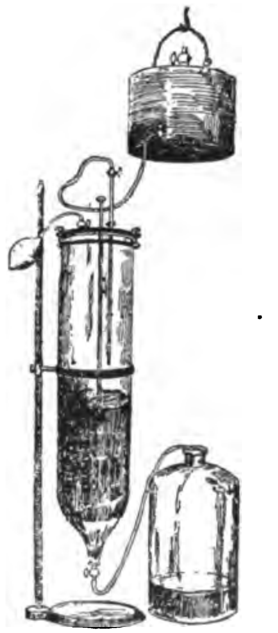
Place the corks in a lukewarm solution of chlorinated lime (½ lb. chlorinated lime to 12 pints of water), and allow them to remain twenty-four hours. Then remove the corks from the chlorinated-lime solution, and rinse thoroughly with water, best on a wire sieve. They should now be placed in dilute sulphuric acid (1:12) and permitted to stand, with frequent stirrings, for twenty-four hours. Remove the corks from the acid solution, and, after washing in the same manner as before, place them in a weak solution (2-per-cent.) of caustic soda. Wash once more and dry.

Corks treated in the above manner are white and neat, and may be used in sales over the counter and in dispensing medicine for external application.

The use of cleansed corks in regular dispensing is a practice not to be encouraged.

Peerless Percolator.

The apparatus is one patented by Mr. Wallace Suits, of Syracuse, N. Y., and consists of a cylindrical glass percolator, supported on a stand in a rubber-fitted ring, the orifice being furnished with a stop-cock upon which is attached the rubber tube for the exit of the percolate. The drug is packed upon a diaphragm resting in the neck of the percolator, and covered with a disc of cloth or paper. Upon this the superior diaphragm is placed, and by means of the affixed rod pressed down firmly. After fastening on the cover air-tight by means of the screw-clamps, the central hollow piston is forced down over the rod of the diaphragm, provided with a spiral screw, and a safe degree of compression of the contents effected. The menstruum is poured into the reservoir, which is connected with a slide tube through the cover for the inlet of the liquid above the drug column. By raising the reservoir to a height of 10 or 15 feet the liquid rushing through the tube soon fills the space above the drug, which should be kept covered with it to a depth of several inches, until the drug column has been permeated, and during the required period of maceration.



In proceeding with the operation the proportion of menstruum suggests its economizing in order to obtain its hydrostatic effect, by permitting only so much of the liquid to flow from the reservoir as will cover the lower end of the outlet tube. This can be lowered or raised to suit. By now opening the valves to the reservoir, air may be forced into the percolator through the hand-ball, care being taken to open and close this valve before and after each operation. The air forces the liquid through the tube back into the reservoir, and the pressure may thus be maintained until the last portion of the menstruum has been used. After all the menstruum has been utilized, the reservoir may be filled with spirit or water, and the original liquid almost entirely displaced.

AMERICAN PHARMACEUTICAL ASSOCIATION.

The Columbian Meeting—A Good Attendance—Mutual Felicitations—Interesting Address by President Remington—A First Copy of the New Pharmacopœia: Some of Its Prominent Features—A Medal for Professor Maisch—Elections—Scientific Section—List of Papers—Etc., Etc.

[Special Correspondence of the BULLETIN OF PHARMACY.]

FOR 1893-4.

President—L. E. Patch, of Boston.
First Vice-President—Leo Eliel, of South Bend, Ind.
Second Vice-President—Wiley Rogers, of Louisville, Ky.
Third Vice-President—Charles Caspari, of Baltimore.
Permanent Secretary—John M. Maisch, of Philadelphia.
Treasurer—S. A. D. Sheppard, of Boston.
Reporter on Progress of Pharmacy—Henry Kraemer, of New York.

The forty-first annual meeting of the American Pharmaceutical Association was held in the Hall of Washington, at the Art Palace, Michigan avenue, Chicago, Monday, August 14th. About three hundred pharmacists were present, this number including the principal officers and prominent members of the Association and a large number of foreign visitors.

The Committee of Arrangements had done its work so well, in meeting its guests and providing them with suitable accommodations, that when the hour of meeting arrived, every one was in a contented frame of mind and ready to take an interested part in the proceedings. Special praise should be accorded, on this account, to the Local Secretary, Mr. Henry Biroth, and his energetic *confrères*, for their valuable services, to which is due a great part of the success which attended the opening of the Columbian meeting.

At 3 P. M. the spacious Hall of Washington, which had been reserved by the World's Congress Auxiliary for the accommodation of the A. P. A., was well filled. On the platform were the President and officers of the Association and several distinguished honorary members from Europe and other quarters of the globe. It was noticed, however, with general regret, that Permanent Secretary Maisch was absent, and the news of his serious illness, which had become known to most of those in attendance, cast a gloom over the otherwise pleasant gathering.

Shortly after 3 o'clock President Remington called the Association to order, and in doing so announced that, owing to the absence of Mr. Maisch, it had been found necessary to appoint a secretary *pro tem*. He had selected Professor Whelpley, of St. Louis, to fill that position, he having kindly volunteered to serve.

President Remington then introduced Dr. Peabody, Chief of the Department of Liberal Arts of the World's Columbian Exposition, who had been chosen to make an address welcoming the Association to the city of Chicago.

Dr. Peabody, who was enthusiastically received, made a long and eloquent oration, in which he outlined the general objects of the World's Fair considered from an educational point of view. He also gave, in detail, some information about the work of the World's Congress Auxiliary. Concerning the latter, he said that for months past the halls had been filled with the representatives of many arts and sciences, whose deliberations had been recorded for the benefit of mankind. Of all these congresses none represented a higher or more useful branch of science than did pharmacy, and he therefore felt specially honored in having been selected to welcome the representatives of such an important department.

Being a Chicago man, the Doctor became especially eloquent when he spoke of the rise and progress of the Western metropolis. He described its educational institutions and referred especially to those which were designed for pharmaceutical instruction. The progress of Chicago, he said, was in many respects similar to the progress of pharmacy. Both had risen from humble surroundings and were steadily climbing upward and onward.

In conclusion, Dr. Peabody said:

> "I am here to-day to say to you all that Chicago welcomes you most heartily to all that she has to offer, to all the privileges, to all the enjoyments connected with the Fair, to her homes and her social life, whatever you may desire to enjoy, and I trust that when you shall return to your homes and your duties you will return feeling that Chicago as a host has given to you of her abundance and that she has given you occasion to remember her with satisfaction and delight in all your future life." (Applause.)

President Remington called on Mr. A. P. Preston, of Portsmouth, N.H., First Vice-President of the Association, to reply to the address of welcome on behalf of the Association.

Mr. Preston, speaking for the Association, cordially thanked Dr. Peabody for his eloquent words of welcome. The Association, he said, had held its forty-first meeting in Chicago for three purposes: *first*, to bring together the greatest gathering of pharmacists that the country had ever seen; *second*, to enable its members to see the wonderful "White City" about which they had all heard so much; *third*, to enable them to see something of Western enterprise, reports of which had penetrated even into the depths of New England, from whence he himself came. People from other parts of the country, Mr. Preston observed, cannot realize the effect produced upon some citizens of that region when they make their first pilgrimage to the West. After having been brought up in the idea that there could be no good outside of New England, it was an astounding revelation. After having seen the West and its great metropolis, Mr. Preston said that he felt prouder than ever before of the great country of which it forms a part. Of its people, he would say that "here they have the grandest people, the most whole-souled people that can be found anywhere, and people who are always glad to welcome their visitors. Under such auspices, the meeting of '93 could not fail to be not only a great success, but one of the most enjoyable in the annals of the Association." (Applause.)

Upon the conclusion of Mr. Preston's address, Mr. Henry Biroth, the Local Secretary, at the request of President Remington, made a brief address of welcome, and referred to the interesting programme that had been arranged for the entertainment of the Association by the Local Committee.

Vice-President Watson here took the chair, and President Remington proceeded to deliver his annual address, which was listened to with rapt attention from beginning to end, being frequently interrupted with applause, especially where reference was made to the work of the Committee on Revision of the Pharmacopœia and the progress made by American pharmacy.

In opening his address, President Remington referred to the fact that for the second time in the forty-one years of its existence the Association met in Chicago. It was indeed interesting to contemplate both the progress made by the wonderful Western city and by pharmacy since that meeting in 1869.

The great Fair and the World's Congress of Pharmacists had combined to bring together a large gathering of representative pharmacists on this occasion, and the benefits to be derived from the deliberations of the one and the contemplation of the other could not be too highly valued. It was pleasing to note that a number of foreign visitors were present, and among these were prominent officers of European pharmaceutical organizations. It was also gratifying to see present, for the first time, delegates from the American Medical Association, whose presence added weight to the belief that is fast gaining ground in America, that the relations of the professions of medicine and pharmacy are rapidly developing towards that point which has been, in times past, so earnestly sought for, when both may meet on common ground and labor together for mutual advantage. Beneficial effects had followed the establishment of the Section of Materia Medica by the American Medical Association and the reception of delegates from the American Pharmaceutical Association in that section. It was to be hoped that one result of this might be the establishment of a joint body or commission for the purpose of securing needed legislation for restricting the practice of medicine and pharmacy to those who were qualified to perform such responsible duties. (Applause.) If such a joint commission were founded, it would undoubtedly fall to the lot of this Association to take a prominent part, as it has done in the organization of the most important joint committee known to both professions, that of the Revision of the Pharmacopœia. It must be a source of gratification to all to know that of the members of this Committee of Revision for the past thirty years, a majority of each committee have been pharmacists. In 1890, of the twenty-six members of the Revision Committee, sixteen were members of the A. P. A.

In this connection the President added that as one of the events of this year the advent of the new Pharmacopœia had just been announced, and he only voiced the sentiment of the Association in tendering to the Committee on Revision and Publication of the U. S. Pharmacopœia hearty congratulations upon the completion of their work. (Applause.) The chairman, Dr. Rice, had forwarded to the meeting, for inspection, the first copy of the latest revision, just issued from the press, and, although the ink is scarcely dry upon its pages, a perusal of its contents will convince the reader that the committee's labors have been arduous, while those of the talented chairman have been little less than herculean. (Applause.) He was sorry to say that Dr. Rice was unavoidably absent, but had sent this copy of the Pharmacopœia, which was the first one that had seen daylight. (Applause.) Since the work will soon be sent broadcast over the land, it would be proper for some allusion to be made to its more prominent features.

In glancing through its pages, the first striking change which will be noticed is the introduction of "solids by weight" and "liquids by measure" instead of the "parts by weight" of the former Pharmacopœia, the metric system being adopted in order to express this principle in the most rational and simple manner, for in no other system of weights and measures is the commensurability of the units so easily effected. It is believed that the radical change in weights and measures will ultimately result in great benefit to pharmacy.

Upon the title-page of the new Pharmacopœia will be seen the line, appearing for the first time, "Official after Jan. 1, 1894," and the issue of the book at this time will permit it to be in the hands of every pharmacist for a suitable period before it is expected to go actually into force, so that it cannot be said that the pharmaceutical profession is entirely unprepared for this radical change which was nevertheless inevitable.

The subject of standardization has been settled in the only possible way. The unanimous conclusion has been reached by the committee that reliable estimates of assay resulting in approximately uniform results, when carried out by different operators and permitting a strict identification of the products, are available at present with only a few drugs, and opium, cinchona, and nux vomica have been selected. The introduction of assay processes which are in the least open to question strikes at the authority and destroys the usefulness of the standard.

The revision tests and definitions of the chemicals has been thorough and laborious. Volumetric methods supplant former gravimetric ones wherever possible, thus rendering analysis by the pharmacist more correct, by reducing the examinations of medicinal chemicals to the simplest and most rapid methods consistent with accuracy.

Referring to the matter of nomenclature, the attempts of the Revision Committee have been very successful in this direction, and the result of their work will be generally approved. On the other hand, the arguments of those who seek to phoneticize pharmaceutical and chemical terms, as, for instance, substituting "f" for "ph" in such words as "sulphur" and "phosphate," and spelling them "sulfur" and "fosfate," had not been found sufficiently important to justify a favorable decision.

The use of particular or proprietary names in the Pharmacopœia has, of course, been avoided, and such substances as have earned a place in the work from their extensive use have been given names which are expressive and suitable. But the important change in the chemical nomenclature in the new Pharmacopœia which, it is believed, will commend itself to all and which has been in practical use by most chemists, is the dropping of the word "of" in such terms as "sulphite of sodium," which becomes under the new method "sodium sulphite."

In pharmacy the new work shows great progress over methods in use during the last decade. The subject of percolation will receive greater impetus on account of the wider application of its principles than ever before. Discrimination, of course, has been manifested, and, in a few instances where the physical structure of the drug rendered percolation impracticable, maceration has been preferred.

The important class of liquid galenicals, the "fluid extracts" and tinctures, have had important additions made to their number. In nomenclature, a new class called "emulsers" has been created, and some of the former mixtures placed in it, and it is hoped that before another revision of the Pharmacopœia pharmacy will have advanced to such a degree that we may have accurate definitions of the various classes of preparations.

The issue of the Pharmacopœia will doubtless lead to the revision of the National Formulary, and there is every prospect that this work will prove, when published, of greater value than the one which is now in use, based upon the Pharmacopœia of 1880.

Referring to the publication of the proceedings of the Association, the President said that, owing to the necessary delay in publishing the annual volume, the suggestion had been made that in lieu thereof a quarterly journal be published, containing the reports on the progress of pharmacy and current matters of interest, but the idea had not been favored, such subjects being already well treated in the pharmaceutical journals, which fully met the wants of the profession.

In closing, President Remington said that while careful deliberation upon subjects immediately affecting the interests of the Association should probably be the first occupation of the Association, yet the researches and labors of the great world beyond the sea should command most serious attention. This is especially the age of synthesis. Analysis is active and full of life, but constructive methods, at present, give to the world a more rapid and practical return than those which are destructive, and applied chemistry is calling large numbers to her allegiance. The last year has witnessed a wonderful development in chemical research, and, as in electrical science, it is entirely beyond human ken to foretell the possibilities of the future. Our chemical journals come to us teeming with facts and inventions and discoveries which tax the minds of the most active and erudite to even glance through and note. One must be gifted with mental endowments to be able to study even in meager outline the present *status* of this branch of science. The accumulation of facts which underlie the massive structure has been rendered possible lately through the development of specialism. The German professor of Greek literature who upon his death-bed confessed with regret the failure of his life because his study of the Greek articles had been unwisely extended to two instead of being limited to one, admirably expresses the thought of the age. Yet, while we may be in danger of going too far in this direction, and it is customary for chemists to pity the worker who has not reached the point in his development where his field is cribbed and cabined and confined so that he can produce a mass of desirable phenomena which may ultimately be valuable, still all must have realized that the great need of the hour is for the calling into life of some great generalizing, comprehensive intellect, with a power of grasping the facts and arranging and classifying them in an orderly and systematic manner; and let us not cease to hope for this great master mind who will ultimately accomplish for the pharmaceutical chemist of our day what Cuvier and Linnæus did in their age for the branches of science with which their names will be forever linked.

The effect upon pharmacy and medicine of this extraordinary activity in the synthetical departments of chemical science has been profound. New chemical compounds and new classes of compounds have been flooding commerce like a deluge, the more valuable ones being protected by letters patent or by copyright names. Competition among the large manufacturers is extremely fierce, and the result to the average pharmacist has been the greatest confusion, uncertainty, and annoyance. It might be supposed that the Pharmacopœia would accept remedies of this class, but the convention of 1890 clearly defined its position as follows: "No medical substance which cannot be produced otherwise than under a patented process, or which is protected by proprietary right, shall be introduced into the Pharmacopœia." (Applause.) It is clear that any substance which is controlled by one manufacturer or corporation becomes a law unto itself, and any test limitation or standard of purity established by the Pharmacopœia could be rendered nugatory at the whim of the manufacturer if it suited his purposes; and the Pharmacopœia would stultify itself by admitting a substance under certain impurity limitations if it were found subsequently that the only substance of the kind that could be obtained in the market was one that deviated from the standard established.

It has not been deemed necessary in this address to bring forward, at this time, for any consideration, a new plan for the control of the sale of various medicinal preparations which have long been sold by druggists, but which have drifted into the hands of people engaged in other branches of retail trade. The Commercial Section of this Association can be safely entrusted with the care of this troublesome matter, and upon their sagacious efforts we may rely with certainty for such relief as is possible.

The Sections on Scientific Papers and Pharmaceutical Education and Legislation will prove interesting and full of instruction to all our members, and, without anticipating any of their work, it can be safely promised that the papers which will be read and the discussions to be entered upon will be of absorbing interest.

On motion of Mr. Kirchgasser, the President's address was referred to a committee of three, and the Chair appointed as such committee Messrs. C. L. Diehl, H. R. Slack, and Henry M. Whitney.

The Secretary of the Council, Mr. Kennedy, read the Council's report on membership, and announced that, in accordance with a resolution passed at the last meeting, the names of applicants for membership would be posted in a conspicuous place in the hall so that they might be examined, and objections if any offered, before final action at a subsequent session.

On motion the minutes were approved.

Mr. Zwick moved that the Chair be requested to appoint a committee of three to frame a resolution expressing the deep sympathy of the Association with Permanent Secretary John M. Maisch, in his present serious illness, and to express also the deep regret experienced in losing his valuable services. The Chair appointed on this committee Messrs. Hoffman, Zwick, and Ebert.

The President next introduced Mr. Michael Carteighe, President of the Pharmaceutical Society of Great Britain.

Mr. Carteighe then spoke as follows:

Mr. President, Ladies and Gentlemen: I confess that I am not a little disappointed at this moment by the announcement just made, that Professor Maisch is unable to be present. I have a special reason for this, because I had conceived a little surprise for him. I am not quite sure whether I have not traveled faster than the mails and that what I have to say may be news to you, but I happen to have in my pocket a gold medal, the Hanbury Medal, which has been awarded to Professor Maisch. (Applause.) This medal, you will remember, gentlemen, is awarded biennially only. It was founded in honor of the late Daniel Hanbury, is international in its character, and is not limited to any part of the world. It is not open to competition; it is open to no examination, but the award is effected by a process of selection, and the officers of the principal societies in Great Britain are the persons who have to make this award. Under the terms of the trust deed, those officers are the President of the Chemical Society, for the time being, the President of the Linnæan Society, the President of the Pharmaceutical Society of Great Britain, the President of the British Pharmaceutical Conference, and one pharmaceutical chemist nominated by the two pharmaceutical presidents. Well, as a result of their deliberations a fortnight ago and under previous sittings, the award, as I have already stated, has been made, and I feel that officially, perhaps, it would be wrong for me to have made this announcement to you, sir, and to the members of the Association, but I felt under the circumstances it would be the proper thing for me to do, and I could not help referring to it in this manner. In awarding this medal to Professor Maisch, the fact of his work was well and carefully considered. You know the work for which this medal is awarded is high excellence in the chemistry and natural history of drugs, in the widest sense of the term, the sort of work that Hanbury used to do, and it would be presumptuous in me to make any reference to the merits entitling Professor Maisch to receive this award. All that I can say in regard to him is, that he is a fair successor to the many distinguished men to whom that award has been made in the past—Flückiger in the first instance, then Dragendorff, John L. Howard, Planchon, next Hesse, and lastly to Professor Maisch. (Applause.) These men, I think you will admit, are men of very great distinction. In making this award of the trustees, I am charged by the Council of the Pharmaceutical Society of Great Britain and by all its members to convey to Professor Maisch the congratulations hearty and sincere of all its members, upon the occasion of this award to a distinguished American pharmacist. (Applause.) The instructions that I carry with me are that this medal is to be awarded by the President of the International Pharmaceutical Congress at its meeting next week, and I think that may be probably arranged in due course, but it seems to me that under the circumstances I am in order in making this brief statement.

Well, sir, putting aside this one touch of sadness in our meeting, allow me to say that I attend here to-day, and two of my colleagues are coming after me as fast as they can, we three members of the Council of the Pharmaceutical Society of Great Britain—the other two being Mr. Martindale of London, and Mr. Martin of Newcastle—come not only to attend the meeting of the American Pharmaceutical Association and the special World's Congress, but come also to this meeting to express in the heartiest manner our cordial sympathy from the old country to you, and to express our admiration for the work which you are doing. You gentlemen, and we in the old country, represent pharmacy so differently and so distinctly from the way it is represented in Europe generally and in all the older countries, that we are, as it were, tied together specially to consider how best to advance our calling by mutual efforts, voluntary efforts, rather than by State aid. You know that you and ourselves have to do our work through co-operation through corporate bodies and associations, and without any subsidy from our Governments. We have to encourage our young men to qualify themselves without the Government itself taking, in most cases, a very active part, and I am not prepared to say that either you or ourselves have been wholly unsuccessful. (Applause.) It may be a question whether the Continental system, where Government, as a rule, gives help, is not the better one—that is a question—but whether or not, I am perfectly certain that the body I represent, I am quite certain, sir, in the body that you now represent, there is that liking for and that desire for free action, uncontrolled by the State, that would make us at present hesitate to adopt the Continental system. (Applause.)

Pharmacy, as you have hinted at in your address, although very eloquently coupled with other matters, is not a calling in which we expect to get rich, and I don't suppose that any one of us ever contemplated when we entered it, or our parents before us, that we should become rich—if they did, they were foolish—but we have a right to believe, and I think we have reason to hope, that, good qualifications and proper training and education on the part of the individual being possessed, we in the old country and you in the new may hope to get a living in the present state of the world, and that is something to be thought of. (Applause.) At any rate, in the old country we only contemplate that at the present time. Of course I am aware that in this great country you Americans do outstrip the universe both in pharmacy and in many respects besides, and also in the acquisition of immense fortunes. On the other hand, I don't know—possibly it's my ignorance—that any pharmacist in the United States, or any number of them, have or are likely to acquire from pharmacy what the people popularly call a fortune, and I'm not sorry that it is so. The business or profession of pharmacy is one that if it is worth anything it is worth working at. The man who complains of his pharmacy and of his fate I have always found to be a man who does not keep himself abreast of the work that is going on. The man who considers that education is not a power, and that it doesn't mean money—I hold that it does—and the man who would carry on his business as a butcher does, an ordinary trade, and who would at the same time demand from the public professional remuneration for the things which he sells, is not likely to get the respect of the public. It is true that we are under great difficulties on both sides of the Atlantic, for, with you as in the old country, pharmacy spreads not from above, downwards, but from the old medicine-woman has been originated the practice of medicine in the old country, and in many respects it has been the same in the United States; whereas in the old Continental countries, medicine came down from the professional classes. Well, that being so, we have, in our respective countries, to deal with a class of the public who imagine that anyone can prescribe for them and that anyone can compound their medicines. That is the natural condition of things until they are educated, and it has taken us a long time in the old country to get the better educated portions of the community not pharmacists to realize it. You, I believe, in the large cities are doing that, and have done that part successfully; and one great advantage you have over us, one for which I envy you, is the arrangement that you have for an enforced curriculum in most of your States, and the excellent opportunities you have for education, not only in Chicago, but in all the principal cities of your republic. What is wanted in pharmacy, as the President has said, is not that every pharmacist should be a highly trained and highly skilled synthetic and analytical chemist—some men there are who are so, but that is not absolutely necessary or even essential—but it is necessary and essential that every pharmacist should know something of the methods by which the weapons he uses in the cure of disease and under advice of the physician are constructed, and to be able to ascertain by proper chemical processes that they are what they profess to be. If every man so educated insists in his own immediate neighborhood that proper remuneration for his services shall be given, I believe that in the old country and in the United States before long the public will respect every one of us and will pay us for our services professionally. (Applause.)

Mr. Lord, the delegate from the National Wholesale Drug Association, followed Mr. Carteighe with a short address to the Association, in which he stated that the organization represented by him was in hearty sympathy with the aims of the A. P. A. and wished the Association every success in the labors of its Commercial Section at the present meeting. It was to be hoped that beneficial results would follow the deliberations regarding trade interests which would take place at another session.

President Remington, speaking of the number of strangers present, many of whom were from abroad, said that he earnestly hoped that every member of the A.P.A. would constitute himself a committee of one to see to their entertainment, so that their visit might be made especially memorable and enjoyable.

The Secretary read the following reports by title: Committee of Arrangements, by Henry Biroth; Committee on Delegation to Visit the American Medical Association, by Jas. M. Good; Treasurer's Report, by S. A. D. Sheppard.

Professor Fennel moved that the American Pharmaceutical Association extend to Dr. Rice and his associates on the Committee of Revision of the Pharmacopœia a vote of thanks for the presentation of the U. S. Pharmacopœia to American pharmacists, and that the members of the A. P. A. pledge themselves to endorse the sentiments expressed by President Remington and make the U. S. Pharmacopœia the standard work from Maine to California. Seconded and carried.

On motion, a recess of five minutes was here taken in order that members from the different States might select a Nominating Committee for election of officers for the ensuing year. On reassembling, the following members were appointed from the States named:

Alabama, P. C. Candidus, J. J. McAfee; Arkansas, W. L. Dewoody, D. E. Shandel; Colorado, J. W. Turrell, C. M. Ford; District of Columbia, W. S. Thompson, S. L. Hilton; Florida, S. P. Watson, C. C. Harris; Georgia, Paul Pennisten, W. R. Cornell; Indiana, L. Eliel, G. W. Sloan; Illinois, C. S. N. Hallberg, H. W. Martin; Iowa, R. Upson, G. H. Schafer; Kansas, M. O. Miner, L. E. Sayre; Kentucky, G. A. Zwick, W. H. Averill; Louisiana, A. L. Metz, C. L. Keppler; Maryland, L. Dohme, Wm. Simon; Massachusetts, C. H. Price, F. H. Butler; Michigan, J. Vernor, G. Gundrum; Mississippi, J. C. Means; Missouri, J. M. Good, H. M. Pettit; New Hampshire, A. C. Preston; New York, L. F. Stevens, J. Pfeiffer, North Carolina, R. Simpson, Mr. Charis; Ohio, L. C. Hopp, G. L. Hechler; Oregon, G. C. Blakely; Pennsylvania, W. S. Heinitsh, Wm. McIntyre; Tennessee, A. A. Yeager, J. O. Burger; Virginia, W. E. Church; Wisconsin, E. Kremers; Canada, S. Lachance, Quebec.

Chairmen of Committee on Nominations at Large, Messrs. Patton, Ebert, Whelpley, Whitney, and Trimble.

The President appointed as a Committee on Time and Place of Meeting, to report at the second session, Messrs. Sheppard, Ford, Whelpley, Eliel, and Patterson.

At the request of President Remington, Professor

Good reported on behalf of the committee appointed to visit the American Medical Association. In this report it was stated that the committee visited the meeting of the Medical Association which was held at Milwaukee in June last, the members of said committee being Messrs. Hurty, Hollister, Dadd, Conrath, and Good (chairman). A number of papers contributed by members of the A. P. A. were presented and discussed. The committee considered that the Section on Materia Medica deserved to be cultivated. To this end, papers and specimens for demonstration were invited for the next meeting, bearing in mind, however, that no proprietary preparations were admissible. The resolution passed by the American Medical Association, that the U. S. Pharmacopœia soon to be issued shall be adopted by physicians in prescribing and pharmacists in compounding, and that both it and the National Formulary be made text-books in the medical and pharmaceutical schools, originated in this Section.

On motion, the report was received and referred to the Committee on Publication.

On motion, the convention here adjourned until 9 A.M., Tuesday, August 15th.

Among the foreign visitors were the following: M. H. Martin, of Newcastle, Eng.; Wm. Martindale, of London, Eng.; Dr. Egger, of Vienna; M. Neygaard, of Christiania, Sweden; Dr. Rambot, of Paris.

There were also present representatives of British, German, and French drug-trade journals.

After adjournment on Monday evening (Aug. 14th) the members of the Association were tendered a very pleasant reception by the Local Committee, meeting at the Casino in the World's Fair grounds, where several hours were most enjoyably spent. Music and refreshments were provided, and, the grounds being illuminated throughout the evening, the celebration was of no common order.

SECOND GENERAL SESSION.

The second general session of the Association was convened at 10 A.M. Tuesday, Aug. 15th, in the Art Palace.

President Remington called the meeting to order, and the proceedings were opened with the presentation of a report on membership by Mr. Kennedy, who stated that 113 new applications for membership had been received, which had been recommended by the council for favorable consideration.

On motion the report was approved and the applicants invited to become members of the A. P. A.

Professor Good, on behalf of the Committee on Nominations, presented the following report:

For President, Edgar L. Patch, of Boston; First Vice-President, E. O. Daly; Second Vice-President, W. Rogers, Millersville, Ky.; Third Vice-President, Charles Caspari, Baltimore, Md.; Treasurer, S. A. D. Sheppard, Boston; Permanent Secretary, John M. Maisch, Philadelphia; Reporter on Progress of Pharmacy, Henry Kraemer, New York; Members of the Council, C. L. Diehl, Louisville, Ky., C. M. Ford, Denver, Col., and Wm. C. Alpers, Bayonne, N. J.

A ballot for the election of President was thereupon taken, Messrs. W. P. Overstreet and Hamilton being appointed as tellers. The ballot resulted in the unanimous election of Professor Patch to the office of President for the ensuing year.

On motion, the Secretary was instructed to cast an affirmative ballot for the election of the other nominees.

Asheville, N. C., Hot Springs, Ark., and Denver, Col., had been presented for consideration as the next place of meeting. The committee reported in favor of Hot Springs. An excited discussion followed, Mr. Morrison of Montreal finally making an appeal in behalf of Montreal, Can. A ballot resulted in the selection of Asheville, N.C., as Hot Springs and Denver were thought to be too far away from the centre of pharmaceutical interests. The time of next meeting will be the first Monday in June, 1894.

Whiteford G. Smith, of Asheville, N. C., was selected as the Local Secretary.

The report of the Committee on National Formulary, Prof. Louis Diehl chairman, outlined the work of the committee, but contained few matters of general interest, the committee remarking, in conclusion, that nothing of a striking character can be submitted to the pharmaceutical profession in this department.

Dr. Hoffman, on behalf of the Committee on Resolutions to Prof. Maisch, presented the following, to be forwarded as soon as adopted:

> "*Professor John M. Maisch:* The American Pharmaceutical Association assembled conveys to you the heartiest greetings, and the sympathy of its members in your sufferings. They keenly feel and regret your absence, and trust that you may find consolation in the knowledge that their love and esteem are with you, and that your eminent and enduring services for the promotion of the Association and for the elevation and advancement of pharmacy will ever remain an ornament in the annals of American pharmacy."

By a rising vote the Association unanimously adopted the resolution.

Mr. Kennedy reported, on behalf of the Committee on Membership, that since the meeting in 1892 more new members had entered the Association than ever before in the same length of time, a total number of 210 having been entered on the rolls.

Secretary Whelpley read a letter from Professor Rice, chairman of the Committee on Revision of the Pharmacopœia, to the Association, stating that while he hoped the new work would be found complete and give general satisfaction, the committee would cheerfully receive any and all suggestions for further improvement, and recommend that the several committees on the Pharmacopœia which have been already appointed or may hereafter be appointed by the Association or by State pharmaceutical associations forward copies of their annual reports directly to the chairman of the Committee on Revision to aid in the good work.

Mr. Henry Kraemer, Reporter on Progress of Pharmacy, made a brief statement of the work that had been done by him during the past year, and on motion the report was accepted and referred for publication.

A recommendation was made in the report that a bureau of information be established by the A. P. A. which would furnish information, *gratis*, to any inquirer on matters of pharmaceutical interest.

Some discussion ensued, in which several members contended that the idea was a good one, but a majority seemed to be of the opinion that the field was already well covered by the pharmaceutical press, which was always ready to give reliable information to those in search of it. The matter was finally settled by referring the recommendation to the Council for consideration.

Professor Fennel, chairman of the Committee on Credentials, presented a list of colleges that had sent delegates to the meeting, the representation from these institutions being much larger than usual.

Treasurer S. A. D. Sheppard next presented his annual report, which showed the Association's finances to be on a very sound and satisfactory basis, in spite of financial disasters and the troublesome silver question. The report was received and referred to the Publishing Committee.

Professor Oldberg called attention to the fact that the British Pharmaceutical Conference was in session at Nottingham, England, and moved that the President of the Association send greetings to that body, with wishes for the success of its deliberations. The motion was carried unanimously, and a suitable message was at once dispatched.

The next report presented was that of the Committee on Prize Essays, which was submitted by Mr. Kennedy. Among other things, it contained a recommendation that a resolution passed at the meeting of 1887 be enforced, which provided that the sum of $150 be awarded to the writers of the three most valuable papers presented to the Scientific Section, apportioned as follows—$75 for the first, $50 for the second, and $25 for the third; that a committee of three be annually appointed by the President of the Association, whose duty it should be to decide whether one or more of the papers presented was worthy of a prize. It was to be understood that any recipient of the Ebert Prize should not be debarred from also receiving one of the Association prizes. Upon motion, the report was received and its recommendations approved.

Mr. Whelpley reported on behalf of the Committee on the Revision of the Pharmacopœia, that, as the new Pharmacopœia has not been issued for a sufficiently long time, the committee has been unable to make any acceptable criticism or great laudations of the work.

Professor Oldberg, of the Committee on the International Pharmaceutical Congress, made a short statement concerning the work of this committee in providing for the meeting. He also outlined the programme that had been laid out for that body.

Professor Fennel presented the following resolution, which, after considerable discussion, was adopted:

> *Resolved*, That the sum of $1,000 be and is hereby appropriated, to be placed at the disposal of the Seventh International Pharmaceutical Congress by the Council of this Association for the compilation, publication, and distribution of an International Pharmacopœia.

Secretary Whelpley read an invitation from the general officers of Armour & Co., inviting the Association to visit the packing houses and stating that a private car would be provided for the use of visiting members.

A letter was also read, that had been sent by the representative of Merck & Co. at the World's Fair, extending the hospitalities of the Merck building to the Association.

Another invitation was from the Illinois State College of Pharmacy, inviting members to call and inspect the new college building, laboratory, etc.

On motion the invitations were accepted with thanks.

The Association here adjourned until 9 A.M. Saturday, Aug. 19th, giving place to the meetings of the Section on Scientific Papers.

SECTION ON SCIENTIFIC PAPERS.

The Section on Scientific Papers met at 3 o'clock in the afternoon of Tuesday, July 15th. Prof. Chas. T. P. Fennel called the Section to order. Prof. Frank G. Ryan, of Philadelphia, acted as secretary.

The proceedings were opened with the reading of the Chairman's address. In this he spoke of the events of the Columbian year, among which should be noted the wonderful progress that had been made in chemistry and pharmaceutical science. American pharmacy, though comparatively young, and not aided by the State as was the case in European countries, had nevertheless eclipsed foreign pharmacy in the nature and scope of its practical work. This was manifested by the wonderful displays at the great World's Fair, where its products were pre-eminent in several lines. American pharmacy had in its ranks men who were known all over the civilized world, and wherever pharmacy was known the names of those past and present masters of the science were justly recognized. He referred to such men as Procter, Squibb, Parrish, Prescott, Maisch, Rusby, Lloyd, Parsons, Diehl, Remington. The same could be said of American institutions of pharmaceutical learning, which had already become the wonder of the profession abroad.

The Chairman referred to the publication of the new Pharmacopœia, and the great benefits which would undoubtedly result to the profession throughout the world through its appearance.

Summing up the work of the past year, it could be well said that there had been unparalleled progress in pharmacy in everything that constitutes an advanced and prosperous science, and one equal to any other on the globe. This was a tangible prophecy of a brilliant future for the American pharmacist. (Applause.)

The address was received and referred to the Committee on Publication.

The Chair stated that at the last meeting of the Section, in July, 1892, a committee, of which Professor Hallberg was chairman, had been appointed to undertake the compilation of an ephemeral occasional publication containing brief descriptions of the properties, uses, and doses of new remedies, the publication to be distributed among medical men by pharmacists in their respective localities, the entire work to be without expense to the Association. The Section would like to know what the committee had done.

Professor Hallberg, in reply, stated that until he received a copy of the proceedings at the beginning of the present year he was unaware that such a committee had been appointed. The time then being so limited, it was deemed inadvisable to attempt the work. He had corresponded with Mr. Snow of Omaha, and Professor Whelpley of St. Louis, the other members of the committee, but the co-operation received had been unsatisfactory. Inasmuch as the committee had never been formally advised of its appointment, the members eventually declined to take any further action.

On motion of Mr. Ebert, this verbal report was received, and the subject dropped.

The preliminary business of the Section having been concluded, the reading of papers was commenced, this part of the proceedings being opened by Professor Sayre, who read a long and interesting paper entitled "Composition of Taraxacum Root at Various Seasons of the Year." This was followed by "Laboratory Notes," by Professor E. L. Patch, and "Beef Extracts, their Manufacture, Composition, and Therapeutical Effect," by Prof. C. S. N. Hallberg.

The last-named paper contained references to all the well known beef extracts, which the author had tested, analyzed, and presented the results of his examination. This aroused a discussion, in which some of the members claimed that it would be unwise to use such names, because it was contrary to the custom of the Association, which in such cases had provided that numbers instead of names should be given. If the names were given, parts of papers might be taken by manufacturers and used for advertising purposes, as had already been done, or they might send representatives to read papers in which their goods were recommended and those of competitors condemned. Some of the speakers intimated that, in case of unfavorable criticism, libel suits might result. A large number present, however, favored Mr. Hallberg's procedure, and stated that without the names a paper of the kind was almost worthless, for the pharmacist who sold beef extracts would then have no means of knowing which was the best and which contained injurious properties, etc.

Prof. Good finally moved that the writer of the paper be requested to designate his samples by number only, and omit the manufacturers' names, and the motion was carried.

The next paper presented was by C. L. Welcome, of London, Eng., entitled "On an Improved Shape for Suppositories and Bougies as Vehicles for Medication." After this came "Atomic Weights," by Dr. Gustavus Heinrichs, and "Bougies," by Nicholas Pritzker, Ph. G.

The Section then adjourned until 8 P.M.

Second Session.

The second session of the Section was opened at 8 P.M., and the first business taken up was the election of officers for the ensuing year. On motion of Prof. A. B. Stevens, the Secretary was instructed to cast ballots for the unanimous election of the nominees, Messrs. Sayre and Ford, as Chairman and Secretary. This having been done, they were declared duly elected.

The reading of papers was resumed, the following being presented: "On the Preparation of Oak Tannins, with reference to the Special Use of Acetone as a Solvent," by Henry Trimble, of Philadelphia; "Caulophylline (from the Root of *Caulophyllum Thalictroides*)," by J. U. Lloyd; "The Value of Titration with Volumetric Acid Solution as a Means of Assaying Alkaloidal Drugs and Galenical Preparations," by Charles Caspari, Jr., PhG.., and Alfred Dohme, A.B., Ph.D.; "Canadian Potash," by Professor Reid, of Montreal (read by J. E. Morrison, of Montreal).

In a discussion that followed Prof. Reid's paper, Prof. Lloyd stated that owing to the decrease in the manufacture and quality of American potash, the users of this material were looking to Canada as the source of their future supply. The Canadian article, he added, was of a high standard and was remarkably free from adulterants.

The next papers presented were: "Change of Volume when Liquids of Different Densities are Mixed," by Wilbur S. Scoville; "The Value of the Pharmacopœial Requirements for Oil of Cloves," by Chas. T. P. Fennel, Ph.G., Ph.D.; "Refractometers and their Uses," by Prof. W. F. Edwards; "A Microscopical and Analytical Study of Coca Leaves," by Alfred R. L. Dohme, A.B., Ph.D.; "Commercial Varieties of Opium," by A. R. L. Dohme; "Hydrastis Canadensis," by F. A. Thompson;

"Contribution to the Literature of Strychnin Determinations" (from the Analytical Laboratory of Parke, Davis & Co., Detroit), by J. B. Nagelvoort; "Gelsemium Sempervirens," by Chas. Otis Hill, Ph.G.; "Colocynth," by Geo. Wagner; "Investigation of the Menthol Derivatives," by Edward Kremers; "An Aseptic Irrigating Tube," by Adolph Levy.

The installation of officers, which followed the reading and discussion of papers, took place an hour before midnight, so that long speeches were the exception. The new incumbents briefly acknowledged the honor of election, and assured the Section of their intention to do all that could be done toward making the next meeting as successful as the one that was about to close.

The Chairman, in terminating the proceedings, referred to the attendance, which showed that great interest was manifested in the work of the Section. In spite of the many rival attractions, the meetings had been well attended from the beginning to the end, while the papers presented were of an unusually high character.

The Section then adjourned, to meet at Asheville, N. C., in September, 1894.

On Wednesday the Association took a day off and spent it at the World's Fair, closing the festivities with a banquet given by the druggists of Chicago. Covers were laid for 600, and the guests concluded that Chicago, as an entertainer, can in many respects fairly lead the world. In the absence of Willard H. Torbert, who had been expected to preside, Professor Remington acted as toastmaster.

SECTION ON PHARMACEUTICAL EDUCATION AND LEGISLATION.

First Session.

This Section was called to order at 9 A.M., Thursday morning, August 17th, by Dr. R. G. Eccles, the chairman, in the Art Palace.

The annual address of the Chairman was the first order of business. It was of a highly interesting and suggestive character, giving a comprehensive and critical history of pharmaceutical legislation throughout the country. Dr. Eccles expressed the opinion that every druggist should receive a practical education before attending a college of pharmacy or getting theoretical training.

Samuel M. Colcord, of Dover, Mass., then read a paper entitled "History of American Pharmacy." Mr. Colcord is 80 years of age and the oldest member of the A. P. A. The paper gave a complete history of American pharmacy from the colonial period down to the present time, and included a full outline of the institution and progress of the American Pharmaceutical Association.

When the paper had been read, the Chair invited remarks upon it, whereupon Mr. Alphonse Major, proprietor of Major's Cement, rose and said that no reference had been made to the institution and progress of saloon-keepers.

The astonishment aroused by this strange comment had hardly subsided when Mr. Eliel, addressing the Chair, said that he was sorry to say that the speaker (Mr. Major) was a member of the Association; that he considered his remark an insult to the Association, and one that no gentleman would make. He wished to announce that on Saturday morning next, at the general meeting, he would bring charges against Mr. Major for conduct unbecoming a member.

Mr. Major attempted to reply, and stated that what he had said was in the nature of a joke, but the Chair declared him out of order and sustained Mr. Eliel's position. The subject was then dropped and business resumed.

Under the head of nomination of officers, the present Chairman, Dr. Eccles, and Mr. Hogan, of Chicago, the present Secretary, were nominated to succeed themselves.

Prof. E. L. Patch, of Boston, read a paper on "Legislation and Boards of Pharmacy, Education and Colleges of Pharmacy."

As the result of certain statements made in this paper, the Section adopted the following: "Regarding the question of registration of graduates of pharmacy without examination by boards of pharmacy, it is the sense of this Section that the best interests of pharmacy would be subserved by a non-recognition of diplomas by State boards; that there shall be no difference in the treatment of applicants for registration in pharmacy whether graduates or not."

A paper by the Secretary of the Lombardini Pharmaceutical Association of Milan, Italy, translated by Dr. Rice of New York, and giving an account of the present status of pharmacy in Italy, was referred to the International Pharmaceutical Congress.

Prof. Wm. Simon, of Baltimore, read a paper on "The Relationship between Gas Volumes and Molecular Weights," which he illustrated with some models of ingenious construction that he had invented for lecture work. The thanks of the Section were tendered Professor Simon for his generous gift of these models to the scientific world, no patent having been applied for. It is believed that Mr. Simon has overcome a difficulty that has been long experienced in pharmaceutical education.

Mr. Carteighe, President of the Pharmaceutical Society of Great Britain, made a short address, in which he contrasted the conditions of the American with the English pharmacist, and the laws of Great Britain with those of the United States. He advocated practical training before examination and registration, but insisted that the theoretical training should be of a high standard. He, however, did not believe in examinations altogether, because many men were able to learn like phonographs and repeat from memory, while others not gifted in that respect, but more capable in a practical way, were unsuccessful. He believed that a candidate for registration should have been trained in the store for at least three or four years, and that he should be compelled to pass his preliminary examination before entering that store. He stated that physicians in England, having by law the right to compound their medicines, entrusted this work to incompetent people. Both pharmacists and physicians should stick to their own profession.

As to legislation, Mr. Carteighe thought that the English system was a good one, where the Government, while not having State boards of pharmacy, authorizes the Pharmaceutical Society to officially examine applicants for registration, yet has representatives from the Privy Council present at such examinations, who strictly scrutinize the proceedings and see to it that the applicants are well qualified.

The reading of papers was next resumed.

Mr. Hallberg presented the following resolution:

> ***Resolved*, That the following conditions shall determine what constitutes recognized colleges of pharmacy: *first*, age 21 years; *second*, experience in pharmacy four years, including time at college; *third*, two courses of at least six months each, extending over more than one year.**

This aroused a discussion in which opinions for and against the resolution were freely expressed, a majority evidently being in favor of it. The resolution was finally referred to a committee consisting of Messrs. Sheppard, Simon, and Ford.

Second Session.

The Section was called to order by Chairman Eccles at 3 o'clock.

The proceedings were opened with the presentation of an annual report by Secretary L. C. Hogan, which gave the substance of reports received from the secretaries of various State pharmaceutical associations regarding pharmaceutical legislation in their respective States. From all of these it appeared that it was impossible in too many cases to enforce the pharmacy laws where "political pulls" existed. During the past year the Secretary himself had had charge of prosecutions for infringements of the Illinois State pharmacy laws, and had found great lack of coöperation on the part of the State's attorneys. He had had cases brought up in country towns where the State's attorney had entered the court and ordered the case stricken from the docket without just cause. Acceptable juries were hard to get, while in some instances politicians have entered the place and said that unless proceedings were discontinued they would have the law repealed at the next session of the legislature. The differing laws in the various States had made matters worse than where no laws existed. The laws were not generally a failure, but time and education on the part of the public alone could make them satisfactory. Pharmacists had been so vigorous in going before legislatures and insisting upon enactments and amendments that they had aroused legislators to investigating, and, as is common in such cases, had caused them to interfere in that about which they knew nothing. The Arkansas law allows a registered pharmacist from another State to register his certificate with questions asked him upon his examination in his own State, and a report from his State board stating the rating received. If satisfactory, examination is permitted, and, when passed, a certificate is granted. This was a common-sense solution of the difficulty. While not reciprocity in the ordinary sense of the term, it secures to people advantages in the matter of delay and extra expense, and furnishes the Board with a chance to conclude intelligently and exercise sound discretion.

There was a ripple of excitement when the next paper was presented. The author not being present, Chairman Eccles offered to read it. It bore the title, "Legislation in Pharmacy," recommended the abolition of every pharmacy law, and was by Dr. Bowker, of Boston, a manufacturer of root beer, a well known opponent of pharmacy legislation.

Dr. Bowker is not a member of the American Pharmaceutical Association nor any other association of the kind, and this fact was pointed out by several members who discussed the advisability of receiving the paper. Mr. Whitney, of Boston, said: "In Massachusetts we have been able to lay him out and bury him deep; and that he should be resurrected by the American Pharmaceutical Association when the Massachusetts Board of Pharmacy had buried him, seems to me to be too bad."

Chairman Eccles thought Dr. Bowker's arguments were weak and would not hold, but to bring them up and prove by discussion that such was the case would be of benefit instead of harm. The Section objected to this policy, and the paper was rejected.

Professor Hallberg read a "Draft of a Proposed Bill to Regulate the Sale of Patent Medicines." According to Dr. Hallberg's idea, every package or bottle of a proprietary remedy should bear the correct formula, and severe penalties should be enacted for adulterations in the compound or deviations from the printed formula.

Various other papers were then read.

Mr. Ebert, of Chicago, complained that the only result of pharmaceutical legislation had been to bring 50 per cent. more people into the drug business than would otherwise have been the case, and the condition of the druggist during the past twenty years had been growing steadily worse in consequence of this increased competition. He had a very poor opinion of Board examinations. He had served on the local Board and knew what he was talking about. There had been too much pharmaceutical legislation, and the less there was of it the better it would be for pharmacists.

Mr. Ebert had a lonesome time of it in his espousal of anti-legislation.

Wm. Bodemann read a paper attacking the "trademark octopus." Physicians had done much injury by accepting, using, and recommending many "fake" articles of no therapeutical value. Any irresponsible concoctor could push a valueless article in this way.

A vote was taken on the nominees for the offices of Chairman and Secretary, which were Dr. Eccles and L. C. Hogan, and Associate Member, T. F. Cummings, which resulted in their unanimous election.

The Section then adjourned.

SECTION ON COMMERCIAL INTERESTS.

At 8 o'clock on Thursday evening (Aug. 17th) the Section on Commercial Interests was called to order by Chairman W. H. Torbert, of Dubuque, Ia. Mrs. Mary O. Miner, of Hiawatha, Kas., was selected as Secretary *pro tem.*

The Chairman's annual address dealt principally with the disposition of the A. P. A. plan for the protection of rates on proprietary articles. The details adopted at Montreal left the execution of the plan entirely in the hands of the Inter-State League, and the American Pharmaceutical Association has assented to this. But the sub-committee of the National Wholesale Druggists' Association having held that pharmacists cutting in self-defense ought not to be denied their supplies, the A. P. A. plan had so far failed, because the most vicious cutter could make the self-defense excuse. The Chair recommended that the Association send a delegation to the National Wholesale Druggists' Association at Detroit in October next to co-operate with the officers of the Inter-State League in securing the enforcement of the A. P. A. plan in accordance with the provisions, conditions, terms, and recommendations set forth in the action of the Proprietors' Association at Montreal and by the National Wholesale Druggists' Association.

The Section adopted this recommendation.

Mr. Alpers presented the following resolution:

Resolved, That although custom compels us to sell and handle such articles as are commonly known as patent medicines, the ingredients of which are unknown to us and the public, yet as professional men we condemn them as unscientific and directly opposed to legitimate pharmacy; therefore, be it further

Resolved, That we recommend to all pharmacists to discourage the use of such unscientific preparations, and in their places to offer and sell preparations compounded by themselves in their own laboratories; and,

Resolved, That we disapprove of all plans upon contracts to regulate the prices of such unscientific articles as useless and detrimental to legitimate pharmacy.

A long discussion followed the presentation of this resolution, which was finally laid on the table.

Mr. Sheppard took the chair, while Mr. Torbert presented the following resolution:

Resolved, That this Association hereby approves of the action of our representatives at Montreal in leaving the execution of the A. P. A. plan entirely in the hands of the Inter-State League.

While the motion was under discussion, Mr. Stevens, of Brooklyn, N. Y., aroused himself and hurled defiance at the opponents of the A. P. A. plan. "Everything is defeated by cowards," he exclaimed. "There are cowards right on this floor, cowards on every side; I have no use for a coward." It was getting very late, however, and the cowards, if any were present, were too tired and sleepy to deny the allegation and defy the allegator, so the challenge passed unnoticed.

Mr. Torbert's resolution was then adopted.

Mr. Rogers, of Louisville, and T. N. Jamieson, of Chicago, were then elected Chairman and Secretary respectively.

The Section then adjourned.

On Friday, August 18th, there was no business transacted, as, according to programme, that day had been set apart for another visit to the World's Fair.

FINAL GENERAL SESSION.

At 10 A.M. on Saturday, Aug. 19th, the final general session of the American Pharmaceutical Association was held.

Mr. Whitney, of Boston, on behalf of the committee appointed to consider the President's address, presented a report approving both the President and all his recommendations except the one to change the title of the National Formulary to the "American Formulary," the committee fearing that the change might lead to confusion and annoyance.

The report was adopted.

President Remington announced that the Secretary of the Pan-American Medical Congress had invited the co-operation of the A. P. A. in the formation of a Section on Materia Medica, similar to that established by the American Medical Association. The invitation had been accepted by him, on behalf of the Association, and it was understood that delegates were to be sent to the meeting.

The President's action was endorsed, and he appointed on this committee Messrs. E. S. Thompson of Washington, chairman, Professor Caspari of Baltimore, and F. G. Ryan of Philadelphia.

The Chair appointed as a committee to award the Association prizes for meritorious papers, Messrs. J. M. Good, W. J. M. Gordon, and J. H. Stein. The committee's report will be made to the Council.

On motion of Mr. Whelpley, the President was instructed to appoint a special committee on membership, to consist of one member from each State and Territory and one each from the District of Columbia, Nova Scotia, Ontario, and Quebec, to solicit new members.

Mr. Eliel then arose to prefer charges against Mr. Major, as stated in the report of the first session of the Section on Pharmaceutical Education and Legislation. He strongly denounced the offending member, whose conduct, he said, was a disgrace to the Association. He therefore moved that Mr. Major, of New York, be expelled from membership in the American Pharmaceutical Association.

After further debate, in which it was claimed that Mr. Major had probably meant no offense but was either carried away by his enthusiasm for temperance or by what struck him as the humor of the remark, the matter was referred to the Council, with power to act.

The thanks of the Association were tendered the druggists of Chicago and the members of the Illinois State Pharmaceutical Association for the entertainment and courtesies shown.

Dr. Woodbury, of Philadelphia, the delegate from the American Medical Association, made a short speech, very much to the point, in which he spoke of the great benefits which would eventually result from the establishment of the Section on Materia Medica by the American Medical Association, by creating a better understanding between the pharmacist and the physician. He spoke very highly of the standing of the American Pharmaceutical Association, as evidenced by its annual volume of Proceedings. In these days of specialism, when the doctor cannot give the compounding of medicines sufficient attention, owing to the wide realm of clinics and therapeutics opened up in late years, he has to rely more and more on the skilled pharmacist. There should be a due recognition of these facts by both professions, and neither should intrude on the other's rightful domain. The physician should not act as pharmacist, and the pharmacist should not prescribe as a physician." (Applause.)

Next came the installation of officers, with remarks by each.

The Secretary then read the following dispatch from Permanent Secretary John M. Maisch:

PHILADELPHIA, August 15, 1893.

To Frederick Hoffmann, A. E. Ebert, and Geo. A. Zwick:

GENTLEMEN: I would request you, as the committee which sent to me the kindly greetings of the American Pharmaceutical Association, to express to that body my heartfelt thanks for its expression of sympathy and its acknowledgment of my efforts in the cause of pharmacy. If those kind words are the sentiment of the profession, then surely I may entertain the hope which, at this time of trial and suffering, is a consolation and a satisfaction to me, that my labors in the past have not been entirely in vain.

Professor Remington announced that all members of the A. P. A. would be welcome to join in the International Pharmaceutical Congress without cost.

After thanking the retiring officers all round, the Association adjourned to meet at Asheville, N.C., the first Monday in September, 1894.

A lake excursion which had been arranged to follow the final adjournment had to be abandoned owing to the condition of the water, which was too billowy to render a sail very pleasant. It was also too rough to allow a landing to be made at Lincoln Park, where a luncheon and reception had been planned. So the programme was altered, and instead of going by boat the Association went in tally-ho coaches provided by the Local Committee, which had furnished the entertainment.

After a pleasant drive round one of Chicago's most beautiful parks, the members of the Association lunched at the Park Casino, where a short time was very enjoyable spent.

The majority of the members from various parts of the country, it was understood, would remain in the city another week, to attend the Pharmaceutical Congress and to see more of the Fair, which had been daily visited by most of them.

The Association has now 1,500 members.

LONDON LETTER.

Further Notes on the Ipecacuanha Question—How to Make Tea—Decalcified Milk a Preventive of Dyspepsia—Ozone a Commercial Article—A Fatal Snake-Bite—The Poisonous Properties of Primula obconica—British Medical Association and Pharmaceutical Conference Meetings.

The excitement that prevailed in the London drug market last month in respect to the alkaloidal contents of certain samples of Brazilian ipecacuanha root mixed with much woody stem, has now abated, but the principles involved in the dispute still remain in as unsatisfactory and befogged a state as ever. Professor Attfield, into whose hands it will be remembered the matter was placed as pharmacopœial authority, has delivered his report, and, although his analytical figures in the main corroborate those of the disputed analyses, the remarks attached to the report demonstrate the uncertainty of the best authorities with regard to such an old and valued drug as ipecacuanha. It is to be hoped that a fuller recognition of these deficiencies may bring the satisfaction of stimulating research of a chemico-physiological nature in this direction.

The professorial and commercial analysts agree in finding respectively 2.0 and 2.1 per cent. "emetine" in the root picked from one sample of ipecacuanha, and Attfield found 2.02 per cent. "emetine" in another specimen. These percentages are much higher than those obtained and held to be correct by previous investigators in this country. The amount of alkaloid found in the separated woody stems by Attfield, 1.89 per cent. in one sample and 1.46 per cent. in the other, is also a surprise to many, and not only shows that the presence of stem in the drug does not seriously affect its alkaloidal value, but also raises the question as to why the stems should be denied official recognition.

But it is when we come to consider how these results have been obtained, that the deplorable state of affairs can be truly realized. The opinion that Professor Attfield himself holds as to the present methods of analysis is sufficiently indicated in his report. "A conventional process for the assay of ipecacuanha, described with great detail and under well recognized authority, will doubtless be forthcoming in due time if no more scientific process should be discovered. Meanwhile, if analysts were to extract with cold ammoniacal chloroform first, and hot afterwards, and conduct any evaporations at as low a temperature as possible, maximum and fairly concordant results as regards any one sample analyzed by different analysts might be expected." As a further instance of discrepancies arising from the incomplete knowledge of the subject, it may be mentioned that at the recent Liverpool public auctions seventy-three bags of so-called ipecacuanha were offered which were pronounced by a local analyst to be rich in emetine, and by a London chemist were declared to be quite devoid of that active principle. The root was from *Psychotria emetica.*

The composition of the amorphous alkaloid returned as "emetine" is still more open to criticism. Assuming it to be all alkaloid, it would be strange indeed if it consisted of a single chemical individual, and more strange if the alkaloids in root and stem and in the various varieties of ipecacuanha that come into the market were identical. In analogous cases a whole series of bases of similar and dissimilar character are generally recognized. Paul and Cownley, who have published a timely *résumé* of the chemistry of ipecacuanha, remarked indeed the presence of a distinctly crystalline alkaloid, melting above 90° C. and less soluble in ether, associated with the amorphous base usually known as emetine, and find it present in relatively very much larger proportion in the stem than in the root. Under these conditions it is not to be wondered at that no very great reliance is at present placed upon chemical methods of determining the pharmacological value of the drug, especially when it is remembered that de-emetinized ipecacuanha still possesses a therapeutical value. It is therefore wise that London buyers for the present abstain from taking any further action in the matter, which would almost inevitably result in diverting a portion of the trade from this market, but as the subject has been brought so prominently before the notice of chemists in all parts of the world it is to be hoped that they will not let it drop.

The enormous consumption of such beverages as coffee and tea holds such an important position both in national life and human economy, that the periodical appearance of fresh chemical investigations of their constituents and new deductions as to their physiological effects never fails to awaken interest. Now that the chemical researches of Dunstan and his co-workers have, it is to be hoped, finally settled the question that there is no difference between caffeine and theine, the other constituents of the respective beverages will no doubt receive more attention. The tea-leaf exhibits a striking dissimilarity to the coffee-berry in the large amount of tannin contained in the former. The injurious results of tea, unless the infusion is drunk to great excess—when the toxic influence of the alkaloid itself takes effect—are commonly and not unreasonably ascribed to tannin, since this substance is known to produce well-marked gastric and nervous disturbances. The problem of eliminating the tannin and retaining the theine in making an infusion of tea has long been a favorite topic for both popular and scientific writers. A medico-analytical commission recently appointed contributes some fresh data. From their experiments they arrive at the following generalizations amongst others: In China and India teas the tannin, but not the theine, varies considerably in amount; the China teas contain from 5 to 6 per cent. tannin, and the Indian teas on an average 10 per cent., but the theine averages about 3½ per cent. in both. Consequently China teas may be safely left to infuse for a longer period of time than Indian teas. Distilled or softened water dissolves the tannin more rapidly than hard, but effects no increase in the amount of theine dissolved, so that the practice of adding carbonate of soda to the water to make it "draw" is not to be recommended. Tannin of course imparts astringency to tea, but is not alone concerned in producing an infusion of the desirable body and strength, for the theine and tannin together only amount to one-fourth of the total extractive matter present. Finally, the commission recommends the reduction of tea to a powdered state before infusion, as by this method the complete extraction of the theine is insured, a minimum of tannin is dissolved, whilst the body, strength, and flavor are exquisite.

The familiar infantile dyspepsia of bottle-fed children, due to the coagulation of the milk, may, according to Dr. A. E. Wright, be overcome by the employment of decalcified milk in the feeding of infants, and also of invalids. The author claims that milk curdles under two entirely distinct conditions—on the addition of an acid, and under the influence of rennet—and that whilst the acid curds are not sufficiently firm to set up digestive disturbances, rennet curds may be extremely firm. Now as rennet coagulation is delayed and the curds become less and less firm with a decreasing proportion of lime salts, Dr. Wright seeks a suitable precipitant for the lime salts, and recommends the addition of one fiftieth volume of 25-per-cent. citrate of soda for this purpose, which suffices to prevent rennet coagulation and yet can hardly be detected by the palate. In support of his argument Dr. Wright points out that whilst human milk only contains 0.03 per cent. of lime salts, cows' milk contains 0.17 per cent., so that cows' milk with the addition of citrate of soda would, at any rate as regards its lime salts, constitute a true humanized milk. As regards the practice of adding lime-water to milk to correct its acidity, the remark of Bunge may be recalled that, paradoxical as it may seem, milk diluted with lime-water contains less lime than the natural cow's-milk, as lime-water contains less lime than the milk to which it is added.

To those the greater part of whose lives is passed in crowded cities the name of ozone has a charmed sound. Whether any advantages would accrue from the sale of ozone by the pint or pound to this imprisoned public is doubtful, but the recent work of Shenstone and Priest has made the technical manufacture of ozone at least possible. These investigators have invented an apparatus by which 30 per cent. of the oxygen employed is converted into ozone. It has been stated that it can be used also for the rapid production of mellow spirits, and especially of "old" whiskey, but as it may be fairly assumed that such a process depends upon the oxidation of certain bodies in the raw spirit, it is not unreasonable to expect that ordinary alcohol would also be oxidized to acetic acid thereby, which would rather unfavorably affect the result.

It is not very frequently that a case of fatal snakebite has to be recorded in this country, and it attracts all the more attention because of its rarity. A boy of 12 years was bitten by what was considered an ordinary "mountain snake" in South Wales; the wound was immediately sucked, and attended to professionally within an hour. Shortly afterwards, however, the boy became decidedly drowsy, and gave evidence of great pain in the affected finger on being roused. Vomiting and mydriasis continued until his decease in thirty-six hours; discoloration of the parts adjacent to the bite spread over the right side; but there were no convulsions or tendency to delirium during any part of his illness. The respiratory and cardiac centres appear to have been rapidly and progressively affected, while the sensorium remained free.

The white or pale lilac-flowered *Primula obconica*, much used in funeral wreaths in this country, is known amongst gardeners to affect certain individuals, but a very distinct instance of poisoning is reported by Dr. Pooley in the case of a gardener suffering from erysipelas. The primary attack was slight in character and affected only the upper part of the face, but the inflammation immediately reappeared whenever he subsequently handled this particular flower, and only then. In these secondary attacks the parts affected were those which a man would naturally wipe with his fingers when heated, and with which, therefore, the juice of the plants he was handling would be brought into contact.

In the course of the next fortnight, assemblies of medical men and chemists will have met at Newcastle and at Nottingham, under the auspices of the British Medical Association and the British Pharmaceutical Conference respectively, which will no doubt provide many interesting contributions to scientific literature. Amongst other papers the pharmacists have promised papers on coto bark, conium fruit, liquid belladonna plaster, papaine, and the pharmacy of the thyroid, whilst Farr and Wright continue on the lines they have made peculiarly their own by suggestions for the standardization of the alkaloidal tinctures of the British Pharmacopœia.

BERLIN LETTER.

The Nuremberg Congress—Alcohol vs. Digitalis—The Pharmacology of Gelsemium Sempervirens—Picrotoxin—Pichi Extract—Tincture of Myrrh in Diphtheria—Philippine Arrow Poison, its Botanical Source Discovered—A Poisonous Linseed Oil.

No clouds have yet appeared on the horizon to overshadow the proposed German Scientists' Congress at Nuremberg this year and to threaten a repetition of the regrettable postponement of the meeting which was necessitated by the cholera epidemic last autumn. The list of subjects to be discussed is already a rich one and in the Chemical Section includes a paper by Dr. Weyl on the Chemistry of Substances Conferring Immunity from Disease, and by Dr. Schottländer on Collodial Gold; in the Pharmacological Section a paper by Professor Penzoldt on the Influence of Different Medicaments on the Digestion; in the Pharmacy Section papers by Dr. Hilger on the Estimation of Narcotic Extracts and on the Occurrence of Cholesterin Esters in the Vegetable Kingdom, by Professor Flückiger on Valerius Cordus, by Dr. Mankiewiz on the Detection of Blood Stains, by Wiegle on the Constituents of Pepper, and by Dr. Degener on the Necessity of Introducing Sterilization Processes into Pharmaceutical Operations.

The combination of stimulating and paralyzing, revivifying and hypnotic properties found in alcohol has determined the importance of alcoholic drinks as remedial agents. In cases of prolonged acute forms of disease, in convalescence and such like conditions, alcohol even in small doses is injurious, because it increases the vascular paralysis. Nature even instinctively struggles against the medicament under such circumstances, so that sick persons who in full health would not have objected to alcohol may show an abhorrence to its administration, and in Professor Harnack's opinion such feelings of repulsion on the part of the patient should be respected. In such cases he considers it advisable to influence the tone of the vascular system, and improve also the circulation, by the administration of small doses of digitalis infusion (1 in 600). An increased pulse will be at once observed in most instances, consequent upon an improvement in the heart's nourishment and ability to perform its functions due to the stimulated circulation. It is absolutely necessary, however, that the treatment should only be effected under the close observation of the physician, and the remedy in any case be temporarily discontinued after two or three days.

An investigation has been carried out by Dr. Cushny on the active constituents of *Gelsemium sempervirens*, which is so extensively employed in America against certain forms of neuralgia and for other purposes. Two alkaloids are present: the white amorphous gelsemine, insoluble in water but forming crystalline salts, and the colorless amorphous gelseminine which only yields amorphous salts. Gelsemine has little or no activity; in mammalia the author found no toxic symptoms, but a high degree of reflex excitement lasting eighty hours was produced in frogs by a dose of 10 milligrammes, causing tetanus and opisthotonos when disturbed. Larger doses paralyzed the nerve-endings in the muscles like curare, and 20 milligrammes caused rapid death by heart paralysis. Gelseminine is more active. In frogs 1 milligramme induces narcosis and a decrease of reflex excitement, 2 to 3 milligrammes a decreased activity of the respiratory centres, a paralysis of the central nervous system which progresses from the brain to the spinal cord, and a paralysis of the ends of the motor nerves. Rabbits are killed by 1 milligramme gelseminine, the symptoms corresponding to an increasing paralysis of the central nervous system, accompanied by respiratory difficulties. Cats require larger lethal doses, but, with the exception of vomiting, the symptoms are the same. Introduced into the human eye, gelseminine dilates the pupil, reddens the conjunctiva, and paralyzes the accommodating powers. The irritation lasts about fifteen minutes, the changes in the pupil from sixty to seventy hours.

A continuation of the studies on the action of picrotoxin is being carried out by Dr. Gottlieb, of Heidelberg. It possesses a marked stimulating effect upon the functions of the brain and spinal cord, and a dose smaller than that producing tetanic symptoms suffices to awaken an animal narcotized with chloral hydrate or paraldehyde. It is not possible, however, to stimulate the respiratory centre with such small doses, the drug developing a most energetic action upon the motoric centres but failing to affect the automatic centres without simultaneously producing cramp. According to this author, picrotoxin approximates most closely to camphor in its action, and as the employment of the latter is incomparably safer it cannot be displaced by picrotoxin.

Dr. Friedländer has made a new contribution to the therapeutical literature of pichi (*Fabiana imbricata*), the old popular remedy in South America, especially in Chili, against all affections of the renal organs, and to which favorable effects have been attributed in the treatment of cystitis, prostatitis, nervous irritability of the bladder, and hyperæmia of the prostate. It will be remembered that in 1890 Schmiedeberg and Holländer determined the chemical and physiological characters of the drug, finding that dilute alcohol extracted a thick brown semi-crystalline mass that contained besides resin acids an alkaloid and a glucoside, which the investigators however failed to obtain in a sufficiently pure state to admit of close physiological examination. Finding that 15 to 20 grammes of the fluid extract had no deleterious or unpleasant effect upon the healthy human system, but rather excited the appetite and decreased the desire to urinate, Dr. Friedländer tried it in cystitis, prostatitis, acute gonorrhœa, and similar conditions. It was administered regularly to each patient in doses of one teaspoonful of fluid extract three times a day, without any complaint of repulsive taste or digestive disturbance, and the records of the case give a good, at times astonishing, account of the beneficial influence of the remedy. It was found especially serviceable in cases accompanied by a profuse purulent secretion, as in acute gonorrhœa and cystitis. Dr. Friedländer ascribes the activity of the remedy principally to the large percentage of resin and tannin, but does not overlook the fact that perhaps the alkaloid also exerts a beneficial action. It cannot, of course, be expected that any preparation of the drug should replace the direct local treatment, as irrigations and injections, but it appears indicated for internal administration, especially as it also presents the advantages of a tonic bitter and aromatic, which is of special importance in cystitis, where the stomach generally requires a stimulant.

The recommendation of Professor Hoadley, of Philadelphia, to employ a 2-per-cent. solution of tincture of myrrh sweetened with glycerin in the treatment of diphtheria, has been tried and adopted by Dr. Ströll, of Munich. He has employed it with success in twenty cases of diphtheria, administering the remedy every hour in daytime, every two hours at night. For infants under two years 1 teaspoonful (5 grammes) suffices, for children between the ages of three and sixteen, 10 grammes, and for adults 15 grammes is recommended. Local treatment is not necessary, but it is advisable to make elder children and adults gargle their throats every two hours with chloroform water (1:200). Under this treatment the urine sometimes becomes turbid on boiling, but that this is not due to albumin is evident from the precipitate not becoming flocculent, and its solubility in alcohol. As Professor Binz has determined that tincture of myrrh increases the number of white blood-corpuscles, it is probable that the beneficial action of the remedy is due to the numerically increased phagocytes being better enabled to fight against the diphtheria germs introduced into the system.

Yet another arrow-poison has been the subject of investigation, which, thanks to his residence in the neighborhood, Loher has been able at least to trace to its botanical source. The arrow-poison of the Negritos, a wild tribe inhabiting the mountainous districts of the Philippine Islands, has been previously regarded as a preparation of *Antiaris toxicaria*, in spite of the fact that no plants of this class have been found in the locality. In the course of an excursion Loher was able to obtain specimens of the bark, leaves, and flowers of the tree from which the natives prepare the poison, and recognized it as ***Rabelaisia phillipensis***, which grows in many parts of the Philippines, as well as in Zambales and other East Indian islands. An extract prepared from the same caused almost instantaneous death of cats and dogs into which only a minute quantity was injected or administered per os. A preliminary chemical investigation revealed the presence of an alkaloid which produces a light burning sensation like cocaine on the tongue.

The appearance of a linseed oil in the market that produced distinct toxic symptoms has raised great consternation in East Prussia, where the oil is extensively used in the preparation of diverse comestibles. In taste, odor, and color, nothing abnormal was noticeable, and the specific gravity, iodine absorption, and saponification constants were also within the normal limits, although the silver nitrate test showed a slight admixture of cruciferous oils, which could not, however, lend it a poisonous character. The examination of the marc from which the oil had been expressed showed, however, that the linseed which had been described as good contained, amongst other contaminations, 15 per cent. of the seeds of ***Lolium temulentum***, the poisonous darnel grass of Europe. This is not the first time that this seed has led to cases of poisoning from admixture with other grain, destined for the preparation of beer and even of bread. As Dr. Antze showed, it contains a volatile alkaloid "loliine" and temulentic acid, which by the action of lime yields a base temulentine. To the two latter bodies especially the narcotic and intoxicating action of the lolium plant appears to be due.

NEW YORK LETTER.

The continued and increasing stringency of the money market, since my last letter, has had the natural effect of still further curtailing business transactions. While bargains are offering every day, the extreme difficulty of realizing money has compelled buyers to exercise wise discretion, and to let the opportunities pass, rather than to expose themselves to large calls for money. The demand throughout the month has been for wants only. Such a condition of affairs, under ordinary circumstances, would be emphasized by heavy reductions in value, but already pretty much everything on the list seems to have reached bottom, and declines therefore are but few; in fact, business has been so very slack that it is difficult to discover sufficiently prominent features to make a letter of this character interesting.

Opium is exceedingly dull. During the last two weeks, more or less sales have been reported, but all showing a downward tendency, and sales being in very limited amounts. The strongest advices concerning a limited crop continue to reach us from Smyrna, but there is little confidence to be placed in these advices. Without question the crop has yielded sufficient to meet all the necessities of the case; but until the stringency of our money market is relieved, higher prices cannot be looked for.

Morphine records no change whatever. The demand is normal, but nothing excessive.

Quinine.—Stocks in second hands continue to come to the front. Manufacturers insist that no stock is being sold by them at lower than their agreed prices. Accepting this to be the case, the amount held in second hands has been very far beyond the estimates. This article is so much dealt in by speculators that the present difficulty of obtaining money forces such speculative holders to realize their stocks. The outcome, therefore, is that when the general market feels encouraged that these excessive stocks are about exhausted, others unexpectedly make their appearance—if not here, from London direct. Therefore, in spite of every effort to rally the market, utter failure has resulted, and the article can be bought to-day at from one-half to one cent an ounce less than one month ago. It is difficult to tell when this condition of things shall end, but probably not until the obtaining of money is an easier task than at present.

Citric Acid.—At the advance of one cent per pound on this article, advised in my letter of last month, sales have been made uniformly in small quantities, but not in sufficient amounts to make any special note of. No round lots have been sold.

Menthol indicates no change whatever. The demand is exceedingly light, and holders firm in their asking prices.

Asafœtida.—Reports from abroad are to the effect that stocks coming forward are exceedingly light, and that in London the stocks are practically exhausted. The demand is unusually active for this season of the year, and prices have advanced about five cents a pound.

Manna, large flake, is reported very scarce. Spot stocks are but small, and, while there has been some advance in price, the advance would have been greater but for the present conditions of our market, which discourage any large deals.

Chamomiles, German. — Unusually large supplies have come forward this year. Absence of demand makes the market flat. These flowers are quotable at considerably less than one month ago.

Camphor. — The continued slack demand has prompted a decline, which decline has been recorded both on the part of domestic manufacturers, and importers of the Japan compressed blocks.

Coca Leaves.—Demand is very slight. No important quantities have been moved. A few bales have been sold, but at standard prices, as there is not room for any important decline.

Senega root has been urged during the past month upon the market very strongly, but, as most dealers do not care to lay out prompt money, these opportunities for purchasing have been passed. It is generally believed that there will be shortly a very important decline in this root.

Celery seed is firmly held; demand but limited; no change in price.

Ipecac has advanced from 6*d.* to 1*s.* per lb. on the London market. Owing, however, to dullness of trade in our country, prices remain about the same.

IMPORTS OF DRUGS, CHEMICALS, ETC., AT THE PORT OF NEW YORK, FOR THE MONTH OF JULY, 1893.

Ammonia, 1 drum; sal ammoniac, 20 casks; ammonia carbonate, 56 casks; muriate, 60 casks.

Alumina sulphate, 3 casks.

Anilin salt, 276 cases, 185 casks; anilin oil, 11 casks, 6 drums.

Alkali, 173 cases, 60 packages.

Aloes, 101 cases, 64 gourds, 79 bbls.

Alizarin, 111 casks, 21 packages, 17 bbls.

Albumin, 46 cases; blood albumin, 200 bags, 16 cases, 10 casks.

Arsenic, 363 kegs, 275 casks.

Asafœtida, 10 cases.

Arrowroot, 12 boxes.

Alligator musk, 1 box.

Aërated waters, 1 case.

Bark, 88 bales, 12 bags, 4 cases.

Borax, 6,250 sacks.

Balsam of copaiba, 12 boxes, 3 cases.

Bergamot, 100 half-boxes.

Buchu leaves, 5 bales.

Chemicals, 2,481 casks, 634 cases, 217 packages, 17 demijohns, 4 carboys, 3 drums, 1 box; chemical preparations, 30 casks, 10 bbls., 2 cases; chemical produce, 50 bbls.; chemical salts, 30 cases.

Chemical balances, 2 boxes.

Cassia, 994 packages, 200 cases; cassia oil, 50 cases.

Cocaine, 2 cases.

Camphor, 349 cases.

Creasote, 1 cask.

Cacao butter, 32 bales, 24 bags, 19 cases.

Cardamoms, 2 cases.

Carboleum, 346 drums.

Cinchonine, 2 cases.

Chrysanthemums, 112 bales.

Colocynth, 2 cases.

Cumin seed, 9 bags.

Castor-oil seeds, 4,789 bags.

Castoreum, 1 box.

Citric acid, 25 packages.

Cod-liver oil, 525 bbls.

Chamomiles, 41 cases, 40 bbls., 33 bales, 24 casks.

Chlorodyne, 1 package.

Cousso flowers, 2 bales.

Cubebs, 99 bags.

Capsicums, 100 bags.

Chlorate, 350 kegs.

Cuttlefish bones, 190 straps, 65 packages.

Carbonate, 20 casks; crystal carbonate, 613 bbls.

Carbolic acid, 26 packages, 25 casks; solid carbolic acid, 108 casks.

Drugs, 200 cases, 106 packages, 65 bales, 19 bags, 13 casks, 1 trunk, 1 box.

Druggists' sundries, 7 cases.

Dragon's-blood, 3 cases.

Essential oil, 46 cases, 6 packages.

Essence of flowers, 20 cases.

Ether, 1 case.

Fuller's earth, 3,986 bags.

Flowers, 15 bbls., 7 cases; flowers and herbs, 2 bales.

Fennel, 5 cases.

Fish-sounds, 23 bags.

Galangal roots, 10 bales.

Glycerin, 282 casks, 239 drums, 10 iron casks, 25 cases.

Gall extract, 10 bbls.; gallnuts, 100 cases.

Gum tragacanth, 2 cases.

Hop meal, 1 case.

Haarlem oil, 40 cases.

Herbs, 73 bales, 17 cases; herbs and roots, 14 bales.

Insect flowers, 100 bales.

Iodine, 88 bbls.

Ipecac, 10 bales.

Jalap, 8 sacks, 2 bales.

Liquorice, 322 cases; liquorice root, 12,782 bales, 104 bags; liquorice paste, 448 cases.

Laurel leaves, 15 bales; laurel oil, 5 cases.

Lime, citrate of, 70 casks.

Leaves, 46 bales, 4 cases.

Leeches, 8 packages, 13 cases.

Medicines, 18 cases, 3 packages.

Medical thermometers, 1 package.

Magnesia, 35 cases; magnesia, calcined, 12 packages; extract of magnesia, 50 cases.

Musk, 3 boxes.

Menthol, 2 cases.

Mercury, 27 cases.

Malt extract, 2,025 cases, 52 casks.

Milk sugar, 12 cases; milk powder, 348 packages.

Methyldioxydhydrate, 10 cases.

Myrabolane, 14 bags.

Myrbane, 50 cases, 2 drums.

Nux vomica, 1,230 bags.

Nitrate of strontia, 14 casks.

Natrium, 4 bbls.

Orange water, 309 cases; orange-flower water, 15 packages, 3 casks.

Oxalic acid, 109 casks.

Oil of lavender, 10 cases.

Opium, 6 packages, 10 cases.

Pharmaceutical materials, 27 packages; pharmaceutical goods, 61 cases; pharmaceutical products, 43 cases.

Phenol salicylate, 4 cases.

Potash, 300 kegs, 88 casks, 65 bbls., 1 case; potassium chlorate, 1,100 kegs, 100 casks; muriate, 13,000 bags; sulphate, 2,250 bags; carbonate, 26 casks; bichromate, 88 casks; potash crystals, 3 cases.

Perfumery, 242 cases, 230 packages.

Plasters, 2 cases.

Phosphate, 13,000 bags; liquid phosphate, 5 cases; ground phosphate, 3,000 bags.

Phosphoric acid, 70 demijohns.

Picric acid, 40 packages, 5 casks.

Pills, 2 cases.

Quinine, 115 cases.

Roots, 707 bales, 151 bags, 103 sacks, 3 cases; ground roots, 2 bales.

Rose-water, 75 packages, 45 cases.

Rape oil, 150 bbls.

Soda, 365 casks, 21 cases; sodium nitrate, 75,590 bags, 12 packages; phosphate, 104 casks, 20 bbls.; prussiate, 14 bbls.; bicarbonate, 300 kegs, 100 casks; carbonate, 200 kegs, 2 casks; sulphate, 63 casks; silicate, 100 casks; soda crystals, 747 kegs; soda salts, 10 casks.

Sarsaparilla, 108 bales.

Sponges, 1,987 bales, 184 cases, 21 bbls.

Safrol, 50 drums.

Storax, 3 cases.

Senna, 11 bales, 9 packages; senna leaves, 15 bales.

Tartar, 653 bags, 404 casks.

Tooth powder, 4 cases.

Tinctorial extract, 114 cases.

Tinctures, 3 casks, 1 case.

Yellow root, 50 bales.

A CONSEQUENCE.

Greeneby: Hello, old chap! How's your liver?

Yellowby: Fine! Been using Dr. Shock's electric liver-pads, and now, b' Jove! I've electric-lights.

SCANDAL.

"*Eadem nocte accidit, ut luna plena esset.*"—CÆSAR.

The wind just breathed it to the pine,
Who shook her head and sighed.
And then *she* told it to the oak,
Who said the wind had lied.
But, all the same, he told the ash,
Who told the willow tree,
And so it passed along the line,
Until it came to me.
I heard it from the speckled trout
Who had it from the pool,
And this is how the story ran—
Last night the moon was full!!—

—A. M. L. in *Quips of Buffalo.*

A PRESCRIPTION FOR THE STOMACH'S SAKE.

Wife: Whom will you bring to dinner?
Husband: Col. Gore and some friends of his from Kentucky.
Wife: Not the regulation topers, I hope?
Husband: No. The Colonel said they were moderate drinkers.
Wife: Well, if that's so, I'll just put a bucket of cognac on the buffet with a dipper in it.—*Life.*

A DEFINITION.

If, instead of a chilly printed slip,
You get a scrawly note,
Wherein the editor tries to tip
The pill with a sugar-coat—

When you're told that your tale has worth and wit,
Or an admirable scheme,
And then—that he'll have none of it—
That's a *succes d' estime.*

—Dorothea Lummis, in *Kate Field's Washington.*

A professor, who used to teach the grandfathers of the present generation of students, objected to the pronunciation of "wound" as if it were spelled "woond," and his students used to hunt for chances to make him explain his objections. One day he stopped a student who was reading to the class, and said: "How do you pronounce that word?"

"Woond, sir."

The professor looked ugly, and replied: "I have never foond any groond for giving it that soond. Go on."—*Argonaut.*

A Very Pretty Quarrel.

Some months ago Dr. W. A. Hammond, of Washington, D. C., wrote an article for the *New York Medical Journal*, in which he described his methods of preparing certain "physiological remedies" to which he gave the names of "Cerebrine," "Medulline," "Testine," etc., indicative of the portions of the animal system from which the remedies (?) were derived. A great show of frankness and tell-all-there-is-in-itiveness was made in the Doctor's article, and one not intimately acquainted with the "ways that are dark and tricks that are vain" of some of the wise men of the East in the matter of obtaining gratis advertising, would naturally have supposed that the article was what it purported to be, a contribution *pro bono gentis humani*.

Parke, Davis & Co., of Detroit, it seems, were among those who did take this view of the matter, and, not knowing that the whole thing was a private snap of Dr. Hammond's, immediately undertook the manufacture of "cerebrine" and "medulline"* and the other *ines* vaunted by the Doctor, and put the same on the market, liberally quoting the article from the *Medical Journal* on the labels of the preparations, and in the literature sent with the latter. Parke, Davis & Co. in this acted throughout in strict accordance with the policy of their house, which was and is to put into the hands of the medical profession reliable preparations of all of the newer remedies, and to give all the information in their power in regard to the same.

While still in blissful ignorance that in taking this course they had ruthlessly trampled on the toes, or rather the pockets, of the Doctor, the Detroit firm was rudely awakened to the actual condition of things by receiving a letter from Dr. Hammond, which, stripped of verbiage and sarcasm, took the Detroiters roundly to task for using his trade-marks—Cerebrine, Medulline, Testine, and the balance—trade-marks which he had sold to the Columbia Chemical Company, of New York, who alone were instructed how to churn the milk in the cocoanut into golden butter for the Doctor's sole table.

Parke, Davis & Co. promptly replied, setting forth in their letter that they were innocent of even a remote suspicion that the article of Dr. Hammond was an advertisement of his proprietary wares, and pointing out that the term *cerebrine* (about the use of which the Doctor kicked hardest) was an old one, which had been in use for forty years or more. This much and much more they wrote, and all of which was gall and wormwood to the distinguished Washington specialist.

Then Parke, Davis & Co. got a letter from Dr. Hammond's lawyers, Kidding & Riddle, or Ridding & Piddle, or some such name, threatening suit for infringement of trade-marks, etc. They turned the correspondence over to their attorney, or rather referred Pidding & Kiddel to *their* attorney, and so the matter stands at present.

Dr. Hammond has issued a circular, which is being sent to the medical profession, and in which he roundly abuses Parke, Davis & Co. as impudent pirates (not in those exact words that we know of), and Parke, Davis & Co. are giving the Doctor rectified hades in a circular addressed to the profession and to the medical press of the country.

While we believe Parke, Davis & Co. to be strictly and ethically correct in the position which they have taken, it will be curious to watch the behavior of the medical press in the matter. Nearly, if not quite, every medical journal in the country carries the advertisement of Parke, Davis & Co., and a very large proportion of them carry that of Dr. Hammond, and this row puts the editors and proprietors of the journals in a hole twixt the devil and the deep sea, and it will be fun to see how they will crawl out of it.

So far as the therapeutical value of the preparations themselves goes, they are not worth, in our opinion, the expenditure of a single dime. Indeed, Parke, Davis & Co. state this openly, but declare that inasmuch as Dr. Hammond and the Columbia Chemical Company have taken the stand explained above, they propose to manufacture the preparations and let the whole matter go into the United States law courts for adjudication.

In the meantime, it will be well for the retail trade not to stock up on cerebrine, medulline, testine, etc., at present. Wait till you see "which whups"—and then don't.—*National Druggist*, St. Louis, Mo., August, 1893.

Further Advance in Pharmaceutical Education.

Those who are informed upon the subject of pharmaceutical education in the United States are aware of the wide differences in the extent of the respective courses of instruction offered in pharmaceutical colleges or schools, especially in reference to laboratory practice. In some colleges of pharmacy the school work is purposely limited to that amount which the student can accomplish while at the same time regularly employed in the drug store, while in others the whole time and attention of the class is required to be directed to the courses of instruction. Both methods have their advocates. It is held by many friends of pharmaceutical education that the student of pharmacy ought to be actively engaged in the business of the drug store while he attends the college of pharmacy, because, it is claimed, he must have the opportunities offered in the store to apply from day to day the knowledge he acquires by the instruction he receives at the college. Others, again, believe that when the student divides his time between the drug store and the college of pharmacy the usual college term is too brief to admit of a sufficient amount of school work, while the incidental opportunities afforded in the drug store during the college course for such work as possesses educational value must, as a rule, be so limited as not to merit consideration in comparison with the exercises provided in the laboratories of a well equipped school of pharmacy, where all the work done is carefully selected expressly for the purpose of giving the student the greatest practicable variety of the most useful practice. The School of Pharmacy of Northwestern University holds to the position that students of pharmacy when they attend the pharmaceutical school should, during the continuance of the college course, devote their whole time to their studies, that the school must provide a sufficient amount of work for the classes to occupy their whole time as advantageously as possible, that simultaneous employment in the drug store is a serious hindrance instead of a help, and that the laboratory practice included in the course of instruction, when properly arranged, is of far greater practical value to the student than any drug store practice during the college course can possibly be. If it be granted, for argument's sake, that the college student is permitted to dispense prescriptions in the store, and that the store in which he is employed has an exceptionally varied and instructive prescription business, it is nevertheless true that a competent teacher can easily provide a still more varied and instructive special course of laboratory practice in dispensing prescriptions and in other extemporaneous pharmaceutical work.

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*This is not exactly correct, for cerebrin only was put on the market by Parke, Davis & Co., and this before they learned the motive of Dr. Hammond's paper.

The amount of instruction offered to students of pharmacy seems to vary from a minimum of six hours weekly to a maximum of about forty hours weekly, while the school terms vary from twenty weeks to over thirty weeks. Two such terms constitute the whole course.

One school of pharmacy alone has offered a course occupying two years, with nine months' work in each year. But that school, now in successful operation for twenty-five years, confers the degree of Pharmaceutical Chemist upon its graduates, while the degree usually conferred is that of Graduate in Pharmacy.

Beginning with the approaching school year, the School of Pharmacy of Northwestern University offers either or both of the courses and degrees referred to in the preceding paragraph. It will continue to give the course of instruction for the degree of Graduate in Pharmacy, requiring attendance during two terms of about twenty weeks each, with the student's time fully occupied by his school work, and with the same requirements as to age and pharmaceutical experience as obtaining in other prominent colleges of pharmacy.

It also now offers a two years' course, with about forty weeks' work in the first year and thirty-six weeks' work in the second year, for the degree of Pharmaceutical Chemist, the requirements for admission to that course and graduation with that degree being the same as have been established in the University of Michigan for the past twenty-five years.—*The Apothecary.*

Cardine, Cerebrine.

The *Pharmaceutische Rundschau*, August, 1893, comments on the impropriety of the unscientific names given to many remedies which are now claimed to be specifics and at the present time are considered *bona fide* in Europe. We quote from the article the following statements:

A well known firm engaged in the manufacture of chemical and pharmaceutical products, published at the beginning of the eighties a clever and cutting parody upon the fashionable swindle—the abuse of the ignorance and credulity of our physicians by alleged new remedies which originate amongst or are chiefly recommended by well known physicians whose scientific dilletantism is notorious here, but whose reputation is regarded as *bona fide* in Europe. The remedies cited in that parody were, among others: "Jennerine," "Pasteurine," "Consumptine," "Dyspepsine," "Ostrichine," "Croupine," "Cancerine," "Brainine." To these have been recently added "Cardin" and "Cerebrin."

We are here familiar with the genesis of such speculative remedies, as well as their paternity and medical sponsorship, and only those who seek fish in puddles are deceived by such articles of speculation.

It is amazing, however, that despite the visible absurdity of such publications in local medical and (at times) pharmaceutical journals, the cautious and critical professional press of Germany is every now and then made the sport of such scientific swindles. Thus, at the present time the description and mode of manufacture of Cardin (properly included amongst delusive articles of speculation) are making the rounds of the Continental professional press.

For purposes of information respecting such preparations, the firm of Parke, Davis & Co., of Detroit, are distributing a little pamphlet postpaid and an explanatory circular, reference to which would be highly serviceable to the editors of European professional journals.

"A Little Nonsense Now and Then."

In the *Pharmaceutische Post* of July 23d, we notice that at the last general meeting of the Druggists' Association at Eisenach, Germany, among ather attractions there was held a humorous examination of druggists' assistants, the druggists' assistants being really represented by the owners. After a few introductory remarks by the examining committee, the three pupils appeared as follows:

Mr. Peter Oleum of Bremerhaven, who makes a "refined" impression.

Mr. Chamomile Tea, of Vulgary, who is "taking" in appearance.

Mr. Senna, of Alexandria, who will no doubt "pass" the examination.

The following questions are the ones which are translatable into English, in others the play of words not finding expression in the English language:

Q.: What is absolute alcohol?

A.: Absolute alcohol is that alcohol which man absolutely must have.

Q.: What is dry distillation?

A.: If a man goes into a distillery and does not get a drink.

Q.: Name some derivatives of iodine?

A.: Iodine, Thou-odine, He-odine, She-odine.

Q.: How is cane sugar prepared?

A.: Take sugar cane and simply turn it around.

Q.: How is oil of turpentine tested for purity?

A.: Set fire to the carboy containing it. If it explodes, the oil is good; if not, it can be safely poured away and a better supply bought.

Q.: How would you purify benzine?

A.: Boil it over an open fire until it is reduced to a thick extract, then dissolve this in water. The resulting product is entirely harmless.

Q.: What is Wermuth?
A.: Commissioner for Germany at the World's Fair.
Q.: How is sulphur obtained?
A.: It is prepared from matches.
Q.: What is its Latin name?
A.: Utan svefel ooch fosfor.
Q.: What does it mean?
A.: Besides sulphur, also phosphorus.
Q.: What does dissolving mean?
A.: A process often applied to socialistic meetings.
Q.: What is an atom?
A.: Nothing.
Q.: How is iodoform made?
A.: Take iodine, melt it and pour it into a form.

To the above might be added the following:

Q.: Which candle burns longer, a wax or a paraffin candle?

A.: They both burn shorter.

Q.: Does the druggist retain the prescription?

A.: No, the doctor retains it, for we all prescribe over the counter, and the doctor supplies his own medicines.

Q.: What articles are recommended to be put in the show window of the drug store?

A.: Those articles which we merely show and do not care to sell.

Q.: What would you do if you could not read a doctor's prescription?

A.: Try to ascertain what is the matter with the patient, and then sell him a non-secret remedy and charge him a dollar.

Q.: What is camphor?

A.: An article the customer came for.

All the students passed the examination *cum laude.*

European Medicines in China.

The British consul at Swatow (China) reports that among the minor imports of foreign origin into this port during the year 1892, medicines show a large increase. Of the 61,863 taels spent in articles under this heading, 2,317 taels were for European drugs. The balance were Chinese concoctions from the Straits and elsewhere. Adding to this balance another 143,087 taels for Chinese drugs imported from other parts of China, it will be seen that in the past year foreign medicaments were only 1 per cent. of the total import. Nevertheless, there is hope for the Western medicine man, as the Chinese are avid consumers of all kinds of drugs, and to judge by the advertisement-sheets of the vernacular press, where medical puffs fill half the space, the drugs most in demand are anti opium specifics and aphrodisiacs. The British consul at Kiung Chow (China), in writing about the coasting trade between his port and Hong Kong, says that much of that traffic consists of native medicines, notably the artemisia-plant, or mugwort, which makes punk used for cauterizing, and moxa, a word which is apparently derived from the Japanese moe-gusa, "burning herb." Mixed with castor oil, this moxa punk makes red ink-paste for seals. Ai-fen, or artemisia-powder, is a kind of camphor, said to be distilled from the leaves of the mugwort. It is used as medicine.—*Chemist and Druggist.*

AN ENGLISH VIEW OF AMERICAN PHARMACY.—The chief interest attaching to the International Pharmaceutical Congress which meets in Chicago next month will be the opportunity which it will afford those leaders of the profession in Europe who participate in it of comparing the condition of pharmacy in America with that in the Old World. It will surprise visitors to find that the American drug-trade shows but few signs of the newness and rawness which are supposed to be characteristic of a young nation, for in the leading cities there are pharmacies holding a heritage of credit, distinction, and influence, and there are pharmacists as accomplished and ambitious as any of their European *confrères.* Moreover, there are hundreds of men engaged in American pharmacy who have received their preliminary training in European countries, and who have brought the influence of their education to bear upon accepted American or traditional methods. American pharmacy is, therefore, in a large measure cosmopolitan, yet it is in many respects peculiar. It is to these peculiarities that we desire at draw attention.

From the trade point of view American pharmacy is unsatisfactory. Nostrums, competition, and cutting have quite changed the trend of trade within recent years, for, while retail pharmacists formerly had leisure to devote to advancing the professional side of their calling, their time during the greater part of the twenty-four hours is now employed in business. Long hours are universal, and there appears to be no prospect of reducing them in the least. This condition is due partly to the changes above referred to, and partly to the extremely mixed character of retail pharmacy in the States. A druggist's stock there, in all but a few of the best pharmacies, consists of medicines, paints, oils and glass, liquors, stationery, soda-water, and cigars. The last two, like Paddy's pig, pay the rent (often immoderately high); the volume of the rest depends upon district and season, and their manipulation does not detract from the respect of the public for the druggist, especially if he be a man who manages the liquor part of the business with discretion. It does, however, appear that the introduction of a refreshment-bar in the shape of soda-fountain and cigar-counter into the drug store is having a decidedly demoralizing effect upon the American pharmacist: it is the demand for drinks and "smokes" that keeps his lights ablaze until midnight, and the substantial returns suffice to justify his attention to this part of his business. There seems to be no special reason why soda-fountains should be so closely associated with drug stores, for it is noteworthy that in the leading stores, having big businesses, the dispensers of drinks are not druggists' clerks but expert mixers of drinks—strictly speaking, bar-tenders. They know nothing about pharmacy, and more about the drink-mixing than their employers. They have accomplishments all their own, but which do not fit them better for a soda-fountain in a pharmacy than one in a candy store. Where the business is not big enough to support one of these experts, the drug clerk or the apprentice does the mixing. This practice introduces an element into American pharmacy of which there is no exact parallel in Europe, and for that very reason European pharmacists may be prejudiced against what to them is often associated with the beer shop and the wine-bar. But the opinion is growing in the States that the soda-fountain is having a deterrent influence upon the progress of pharmacy, since it is drawing the interest of a large portion of the trade away from the purely technical side. For this there seems to be no immediate remedy, and, it ought to be said, no general or expressed feeling that the soda-fountain is bad. It brings legitimate business, and there is an end of the matter; but we may be thankful that climatic conditions have hitherto prevented the introduction of the soda-fountain into English pharmacies.

Far more serious to the American drug trade is the steadily growing popularity of proprietary medicines. The extent to which these are consumed is inconceivable, for, whatever the cause may be—rush of business, rapid eating, iced water, or extremes of temperature—dyspepsia, liver troubles, and other annoying maladies are universal, and people seek relief in what happens to be the popular medicine of the day. This was good for the druggist while prices were at par, but since they have been cut by soft-goods men, and two-thirds of the business consists of "patents," the result is exceedingly serious to the druggist. Nor can he remedy the matter in the least. The manufacturer advertises, the consumer believes and buys, and somebody must sell. Simultaneously with this hard knock, the American druggist has met with an attack from another side: the doctor is no longer his faithful ally, but has begun to do his own dispensing—a small stock of pills or triturates sufficing to meet all the needs of a family practice. The druggist feels the change; indeed, the comparative rarity of prescriptions is one of the things which compel him in self-defense to cultivate the soda-water and cigar business. He is, therefore, largely a creature of circumstances, and, these being at present against him, European pharmacists should not expect either much science or high philosophy from behind the drug-counter. They must remember that their American *confrère* is in a greatly overmanned trade, that competition is keener, business quicker, and hours longer than in Europe; and should his soul be above the making of dollars, or his aspirations lead him to cultivate the professional technique of his calling, he has little to encourage him in prosecuting research or advocating reform.—*Chemist and Druggist*, July 22, 1893.

Pil. Dipsomania (Dr. Mann).—At a meeting of the American Association for the Study and Cure of Inebriety, held at the New York Academy of Medicine, March 23, 1893, Dr. Edward C. Mann, of Brooklyn, N.Y., Medical Superintendent of Sunnyside Private Hospital for Diseases of the Nervous System, Alcoholism, and the Opium Habit, read a paper on "Science *vs.* Folly in the Treatment of Disease caused by the Abuse of Stimulants and Narcotics: A Plea for the Suppression of the Nostrum, Patent Medicine, and Specific in Rational Therapeutics." After comparing scientific medication with charlatanism, and showing the physiological action of alcohol on man and his offspring, as well as the diseases produced by indulgence, Dr. Mann passed to the subject of Treatment of the Disease of Inebriety. He recommended the following as a good tonic and sedative in dipsomania, having a good effect on the stomach, and tending to antagonize both the degenerative changes in the brain and the effect of alcohol on the structures of the body:

℞	Quininæ sulph	gr. ij.
	Zinc oxide	gr. ij.
	Strychnia sulph	gr. $\frac{1}{40}$.
	Arsenic	gr. $\frac{1}{100}$.
	Capsicum	gr. ij.

M. et ft. pil. No. j. Sig.: One pill three times a day.

Together with this pill, Dr. Mann uses in his private hospital for sixteen days the following hypodermatic dosiometry:

℞	Strychnia nitrat	gr. j.
	Aquæ dest	℥ ss.

M. Sig.: Eight minims daily for eight days; 4 minims daily for another eight days.

To quiet the morning nausea of alcoholics, two or three drops of wine of ipecac on the tongue, fasting.

The patient is kept in bed for the first few days, and fed on milk and meat-juice for nourishment. Hydrotherapy and electrotherapy are employed. To induce sleep, the following sedative is administered at night for a few days:

℞	Tr. opii deod. Ext. hyoscy., fld. Chloral hydrat. Pot. bromid.	ää	ʒ j.
	Tr. capsici		ʒ ss.
	Tr. aconit. rad		♏v.
	Aquæ menth. pip	ad	℥ iv.

M. Sig.: Two tablespoonfuls at bedtime for a few days only, freely diluted with water.

If the patient is very much excited and is bordering on delirium tremens, the following is useful for two or three nights:

℞	Hyoscin. hydrobromat	gr. j.
	Aquæ dest	ʒ ix.
	Spt. vini rect	ʒ j.

M. et ft. hypodermatic solution. Sig.: Dose from 5 to 10 minims *pro re nata*.

The diet table in Dr. Mann's hospital consists of milk, eggs, oysters, meats, fish of all kinds, buttermilk and koumiss, plus a minimum amount of the cereals. Vegetables and starchy foods allowed only very sparingly, the idea being to rely on a diet which requires the least vital force and oxygen to digest, assimilate and appropriate, and to have ingested into the body such material as will, when brought under the influence of oxidation, yield energy, which is the expression of vital activity, and give the largest working power for the amount of food taken. By such a plan of treatment patients are sent out with restored health, the craving for alcohol gone, the lost will-power restored, the shattered nervous system built up, and with a concentration of energy, physical ability and mental activity obtainable by no other plan of treatment. In order to render Dr. Mann's pill available to the medical profession, Parke, Davis & Co. have added it to their list of gelatin-coated pills, which they are now prepared to supply in bottles of 100 or 500.—*Ontario Medical Journal*, July, 1893.

THE CHEMISTRY OF IPECACUANHA.—Next to opium and cinchona bark, ipecacuanha is probably one of the most important drugs included in the official materia medica, but its chemical history is still very imperfect, and although some of its medicinal effects are ascribed to an alkaloid, there is considerable doubt whether that is always the case.

For several months past we have been engaged in the endeavor to devise a satisfactory method of extracting from ipecacuanha the alkaloid which has been regarded as the active principle of this drug, and to which the name of emetine has been applied; our object being to obtain such means of quantitative determination as could be relied upon when applied to the examination of different samples of the commercial drug or of its medicinal preparations. In prosecuting this inquiry reference has of course been made to the observations of previous experimenters; but instead of deriving much assistance from the published statements of their results, we have found that they lead to considerable uncertainty respecting the chemical identity of the substance. Thus, for instance, in the description of emetine given by Lefort,* it is stated to be very readily soluble in solutions of caustic soda or potash, and that in such solutions emetine rapidly undergoes alteration by absorbing oxygen from the atmosphere. We have found that this is not the case with the alkaloid supplied by Merck as pure emetine, or with that which we have ourselves obtained from ipecacuanha. Even on precipitating the base from solutions of its salts with caustic alkalies the precipitate formed is not dissolved again on adding an excess of caustic alkali. There are similar discrepancies between the statements as to the physical characters of the alkaloid of ipecacuanha. Most authorities describe it as being perfectly amorphous, some state that it is susceptible of crystallization under certain conditions, while others again describe it, without any qualification, as having the form of "needles"† or "crystals."‡ The statements as to the melting-point of the alkaloid also differ considerably. In addition to these discordant statements, we have found, in experimenting with several samples of ipecacuanha, that the alkaloid is not homogeneous, but a mixture of two or more different substances.

From the examination of a number of different samples of ipecacuanha we have ascertained that the alkaloid existing in this drug is for the most part a perfectly amorphous substance, of marked alkalinity, forming definite neutral salts which are also amorphous, and, like the base they contain, uncrystallizable by any means we have been able to apply. Hence it would appear that the want of a simple method of obtaining crystallized emetine is likely to remain a constant quantity, and that, in point of fact, the determination of emetine is at the present time only approximatively possible, inasmuch as the substance is unknown.

Further, we have found that this amorphous alkaloid is associated with others which are distinctly crystalline and very different from the amorphous alkaloid in physical characters. This fact we have established beyond doubt, and we are of the opinion that it will serve to account for some of the discordant statements which have been made in regard to the alkaloid of ipecacuanha. Thus, for instance, it is stated by Kunz,* as well as Lefort and Wurtz,† and Podwyssotzki,‡ that although the substance described by them as emetine was generally amorphous, they sometimes obtained the alkaloid in the form of distinctly crystalline needles, by rapid evaporation of an ether solution. On several occasions we have observed a similar formation of very delicate silky crystals when the ether solution of the alkaloid from ipecacuanha was left for some time. Sometimes the formation of these crystals took place in such a manner that the ether solution appeared to become quite solid; but on re-crystallization from ether the apparently solid mass could be separated into an amorphous .portion and a crystalline substance that was much less soluble and, in proportion as it was purified, was found to have a melting-point of 90° to 98° C., which is very much higher than that given for emetine by any observer. Consequently the desideratum of crystallization, assumed to be necessary for the determination of emetine, would not, if it were attainable, suffice for that purpose, since other alkaloids are present which would still have to be separated in order to obtain definite results.

The crystalline alkaloid above referred to is very much less soluble in ether, chloroform, or benzene than the amorphous alkaloid with which it is associated; but, as is usual in such cases, it is not until separation has been carried to some considerable extent that this difference becomes apparent. The quantity of material disposed of in the operations of fractional crystallization or precipitation, requisite for separating the alkaloids, is so great that very little remains for further examination unless larger quantities are operated with than we have yet had at our disposal.

The stem of Brazilian ipecacuanha appears to contain a small amount of the same amorphous alkaloid that is present in the root; but it is accompanied by a distinctly crystalline alkaloid. The latter is very sparingly soluble in ether, but separates from the solution on slow evaporation in lemon-yellow transparent crystals melting above 100° C. When precipitated from the solution of a salt by ammonia, it rapidly assumes a crystalline form, and on addition of caustic soda it is dissolved in the manner stated by Lefort (see *supra*). It forms a neutral hydrochloride which is amorphous, and the platinum salt appears to be readily decomposed.

This alkaloid is present in very much larger proportion, relatively to the amorphous alkaloid, than it is in the root. Consequently it follows that determinations of the amount of alkaloid, as a whole, in the stem will not correctly express the relations of stem and root in regard to the amount of emetine. Evidently no inference can be drawn from such determinations as to the relative values of those portions of the plant as medicinal agents.

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* *Journal de Pharmacie* [4], ix, 244.
† Watts' "Dictionary," ii, 431.
‡ Thorpe's "Dictionary," iii, 916.

* *Archiv der Pharmacie* [3], xxv, 465.
† *Comptes Rendus*, 84, 1300, and *Annales de Chim. Phys.* [5], xii, 281.
‡ *Pharmaceut. Zeitschrift für Russland*, xix, 1.

New Granada ipecacuanha (Carthagena) contains about the some amount of alkaloid as the Brazilian, although there is no distinct chemical evidence that the root alkaloids of the two plants are identical. We have found, however, that the Carthagena ipecacuanha contains another crystallizable alkaloid, which presents marked differences from the crystalline alkaloid of Brazilian ipecacuanha.

Again: while some have taken 1 per cent. as the maximum amount of emetine in ipecacuanha, others have taken 1.6 as the minimum for a sample of good quality, and others again have insisted that nothing should be recognized as good which does not contain at least 2.5 per cent. Placing side by side with these differences the different experimental data obtained by various operators, which run through all possible gradations between 1 and upwards of 3 per cent., it is evident either that ipecacuanha root is a very variable drug, or that the experimental results must have been largely influenced by accidental circumstances.

It is not in extraction and evaporation, but rather in the operation of "shaking out," that heat is likely to cause loss of alkaloid, not by its destruction, but as a consequence of particles of the precipitated alkaloid being melted and thus rendered practically insoluble. The fact that the alkaloid becomes almost insoluble after being melted has been pointed out by Kunz, and, as its melting-point is so low, there is great risk of loss in this way if the precipitation is too rapidly carried out. The assumed decomposing action of alkalies has been spoken of as causing low results; but that explanation is inconsistent with the fact, mentioned by Kunz, that emetine offers remarkable resistance to the action of alkalies. Altogether we are disposed to think that, in the determination of alkaloid in ipecacuanha, differences in experimental results arise mostly from the want of preserving, throughout the entire treatment, conditions which are suited to the characters of the material operated upon and of the substance to be obtained from it.

	Total Mixed Alkaloids.	
No.	Root.	Stem.
1	2.02	....
2	1.95	....
3	2.14	....
4, picked	2.12	....
5 "	....	0.97
6	2.08	....
7	2.03	....
8, picked	2.28	....
9 "	....	1.76
10	2.22	....
11, picked	....	1.02
Mean	2.11	1.25

The picked samples consisted entirely of either root or stem respectively. The other samples of root were operated upon without separating any admixture of stem that might be present; but it was not in any case sufficient to affect the result very materially. Two of the samples of stem were carefully picked to separate any particles of root; but the other sample, No. 9, was found, after the analysis had been completed, to contain a considerable admixture of portions of root-bark, and that circumstance probably accounts for the higher amount of alkaloid obtained in that instance.—Dr. B. H. Paul and A. J. Cownley, in *Pharm. Jour. and Trans.*, July 22, 1893.

INTERNATIONAL CONGRESS POSTPONED.—A cable dispatch from Rome, dated August 2d, reports that the Eleventh International Medical Congress has been postponed until April next, by reason of the prevalence of cholera.

A TEST TO DETERMINE THE QUALITY OF SUSPECTED SPOILED MEAT.—For the recognition of spoiled meat, the authorities employ in the inspection of meat at Dresden, for the so-called salammoniac-decomposition test, the Eber reagent—a mixture of one part hydrochloric acid, three parts alcohol, one part ether. If a glass rod, moistened with this reagent, be brought in proximity to the suspected meat, and vapors (caused by the formation of salammoniac) are produced, the meat is spoiled and it may not be offered for sale, being utilized solely for purposes of manure.—*Pharm. Centralhalle*, June 29, 1893.

A SECTION ON MATERIA MEDICA AND PHARMACOLOGY, Pan-American Congress, has been organized under the executive presidency of Prof. Joseph P. Remington, of Longport, N. J., with Prof. F. G. Ryan, 3739 Brown street, Philadelphia, as English-speaking Secretary. This Section promises to be one of the most important of the entire Congress. Delegates have been invited from all the pharmaceutical societies and colleges in all the Americas. Those contemplating attendance are invited to prepare papers on pharmaceutical topics. Titles should be sent at once to Professor Ryan, Secretary.

THE MINNESOTA BOARD OF PHARMACY met on July 18th, and the following persons successfully passed as full registered pharmacists out of a class of forty-one: Fred. J. Matthie, of Minneapolis; W. J. Camden and Willis Rheinhardt, of St. Paul; Gustave J. Gilbert, of Halstad; Andreas Stromsal, of Morris; Geo. H. Woodgate, of Slayton; and Elmer Heyerdahl, of Rochester. Those who passed as assistants are as follows: Harvey B. Miller, James Bergquist, R. T. Dukelow, T. J. Erikson, H. H. Hazeltine, A. D. Krause, A. C. Siewers, Wm. Kubat, F. J. Lerz, Frank Lemmer, C. B. Wilds, Leslie A. Hanes.

THE CREDIT PROBLEM.—Whom and whom not to credit, and the limit of credit in each particular case, have always been problems which business firms have had to grapple with in varying degrees, ever since money has been in existence, and possibly before that time.

Just now, however, the subject is brought more than usually into prominence by the financial stringency, and the unfortunate effect, even though it be but temporary, which it has upon general business.

It is at such times as these that the buyer who has been slow in his payments before becomes slower still, or probably ceases to pay at all, and the man with cash looks about even more keenly for advantages in the way of discounts, etc., which merchants needing cash more than ever by reason of the slowness of general collections are more ready to give, in the strife between each other for the custom of these good-paying ones, who, in such times, are counted upon to supply in some measure the deficiency which the poorer buyers create by their shortcomings.

Financial tides there are, pretty much like those of the ocean. They mount up in huge waves of prosperity, and recede to the depths of such business depressions as the world has witnessed periodically. When they are on the upward move, with money plenty, enterprises of all kinds are active and continue multiplying in number until some of the wisest of merchants sometimes lose their heads, as the saying goes, and recklessness in the way of credit, caused by the desire to make big sales, grows to its limit at the top of the wave of prosperity, and then, overweighted by its own inflated size, with the tide below sweeping away from it, the unsustained mass dissipates into foam, and its frothy and unreliable nature becomes apparent, and merchants, standing gazing at the flimsiness of the accounts left to them, understand but too late that they had mistaken the summit of an uncertain wave of mere speculation for the steady commercial stream of sound business activity.

They teach severe lessons, do these days of depression, whenever they occur, dearly bought ones it is true, but effective in some ways, as, for a few years thereafter, there is more caution observed in the conduct of the houses which weather the storm, questionable enterprises are not so common, and business gets into a safe conservative routine, and the sea of finance becomes placid once more. But, unfortunately, it does not permanently remain so. New elements, continually coming into business, elements which know nothing of the conditions which contributed to the past difficulties, stir the times again to a new tension—it does not take much wind to make a big sea—and active competition in selling again puts in motion the same forces which led to the previous calamity, and history is repeated as it has been many times before.

There has been entirely too much and too long credit in almost all the lines of our trade. Some jobbing druggists are said to literally carry a big number of retail pharmacists year in and year out, with each year the indebtedness growing larger and larger; varnish manufacturers extend a credit of three, six, and sometimes nine months where thirty days ought to be long enough; while paint grinders, through a pernicious practice of dating bills ahead and similar devices, thus indulge in an extension of credit which, when times of financial depression occur, is severely felt. All these practices are the result of unorganized and misdirected haste to sell goods to anyone and every one who cares to buy before a competitor has the chance to sell to him on better terms.—*Paint, Oil, and Drug Review*, August 2, 1893.

Trade Supplement.

The BULLETIN *invites its advertisers and subscribers, and all connected with the drug trade, to send items of information, for these columns, concerning all new departures, products, and facts regarding the general and special trade interests of druggists.*

MINNESOTA.

Frank M. Guiwitz, formerly at Hainert's pharmacy, corner Sixth street and Nicollet avenue, Minneapolis, has accepted a position with Voegeli Bros., the prominent pharmacists at Hennepin and Washington avenues.

The money-till in Nelson Sutton's drug store at Twenty-fifth street and Bloomington avenue, Minneapolis, was robbed of its contents on Sunday, July 16th, while Mr. Sutton was at dinner. The thieves have not as yet been apprehended.

F. H. Hall, who for some years has had charge of the drug department at the Second Minnesota Hospital for the Insane at Rochester, is contemplating engaging in the dry-goods business with his father at Austin, his old home. We will wager, however, that before many moons he will be behind the prescription counter again. There is a certain fascination about the profession, and many who have said "This is my last year in the business," gradually drift into it again, and wonder why they ever went out.

⁂

TEXAS.

J. K. Gault's drug store, Bellevue, was burned on the 16th inst.

The firm of Bedford & Fisher, druggists, Fort Worth, has dissolved. W. J. Fisher is now sole proprietor.

⁂

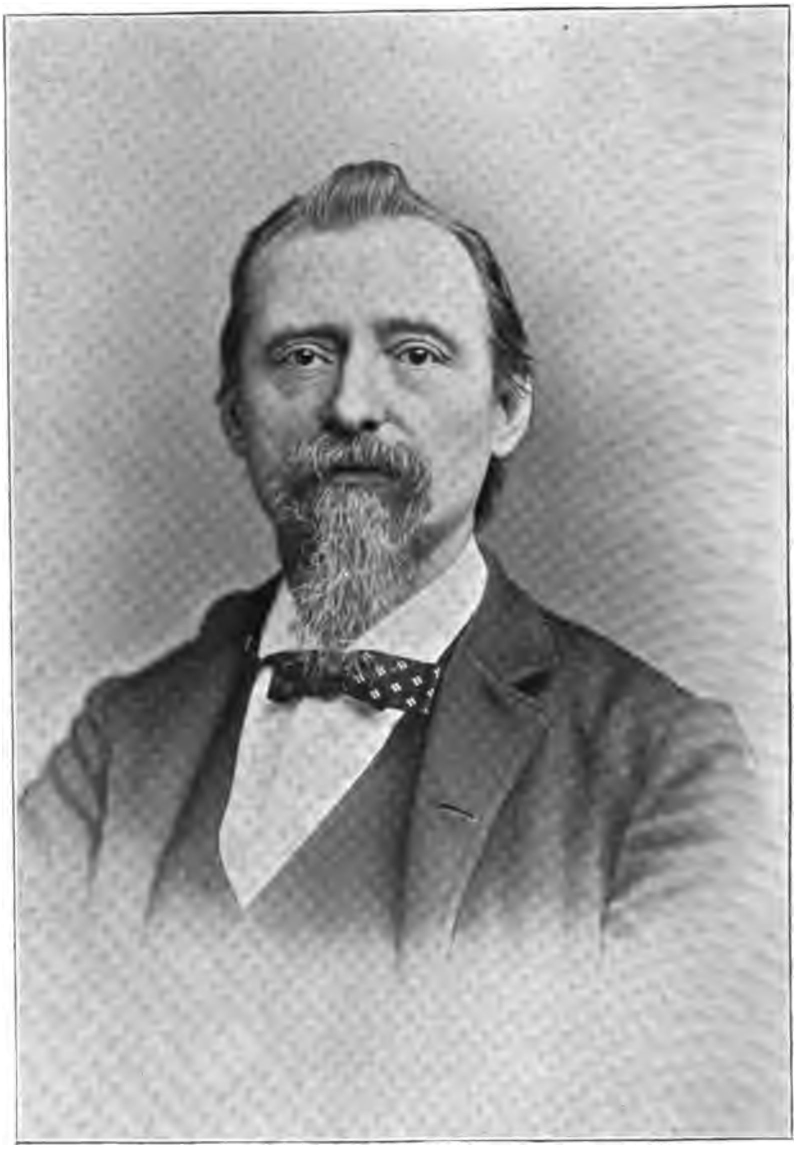
WISCONSIN.

H. E. Tanner, for a long time in the wholesale drug business at Green Bay, has sold his interest in the wholesale store to his partner, John Robinson, and is now successor to J. A. Froehlich in the retail drug business at Oshkosh.

C. F. Yates, representing M. P. & Co., who has been making Janesville his home for the past few years, has the sympathy of many friends, and especially of all the "boys on the road," in this time of his great affliction. His wife died quite suddenly about two weeks ago.

F. F. Prentice, of the firm of Prentice & Evenson, Janesville, was prostrated by paralysis some three or four weeks ago, since which time he has been unconscious and there is very little prospect of his recovery, though his many friends have hopes that he may rally.

Paul Schaller & Co., Madison, succeed Haley Bros. in the "Old Corner Drug Store." Mr. Schaller, who will look after the management and personally superintend the prescription department, is a young man of large acquaintance and many friends. The BULLETIN wishes the new firm success.



Very truly yours

J. M. Maisch

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INDEX OF CONTENTS.

Editorial.

PAGE
Johann Michael Maisch 385
The New Pharmacopœia 387
Shabby Hospitality! 388
"A Daniel Come to Judgment!" 389
The Nineteenth Annual Convention of the National Wholesale Druggists' Association 389
A Fitting Affiliation 394

Original Articles.

PRACTICAL PHARMACY.

Change the Laws. By W. Bodemann 395
Sulphuric Acid. By Thomas Warwick 396
Substitution. By Addison Dimmitt 399
Should Candidates for Graduation in Pharmacy be Able to Make All Preparations, a Process for which is Given in the United States Pharmacopœia? By Prof. L. E. Sayre. 401
Should Any Candidate be Permitted to Graduate in Pharmacy before He is Able to Apply the Tests and Assays of the United States Pharmacopœia? By Dr. William Simon 402
Are Pharmacy Laws a Benefit to Pharmacists? By John H. Manning 403

CHEMISTRY.

Manufacture of Acetamide. By Sheldon Coleman 404
Contribution to the Literature of Strychnin Determinations. By J. B. Nagelvoort 405
Some Practical Observations. By an Old Philosopher 407
Nut Cracking 408

Correspondence.

London Letter 409
Berlin Letter 412
New York Letter 413
Chicago Letter 414
Impressions of Prof. Dr. Pettenkofer 415
Mr. Haynes and the Wholesale Druggists 415
Imports of Drugs, Chemicals, etc., at the Port of New York, for the Month of August, 1893 417
Book Reviews 418
Facetiæ 419
Abstracts and Translations 420
Pharmaceutical Progress 427
Notes and News 429
Trade Supplement 432

JOHANN MICHAEL MAISCH.

Next to the kindly offices which personal friends alone can render at the bedsides of their dear ones when the Death Angel has called them, comes the tribute of regret from the outside world when it learns of the common bereavement. Most sincerely do we extend to the friends of the late Professor Johann Michael Maisch our sympathy for their loss, and equally sincerely do we extend to them the expression of the regret which the whole scientific world feels in the loss of so worthy a co-laborer.

That the scientific pharmacy of America has lost one of its most worthy fathers, no one will for a moment deny. In our midst to-day are men who have come from the same country (Germany), who spend their lives with us, and who never seem to get thoroughly identified with the country of their adoption; they are never tired of praising old-country ways and institutions; nor do they ever lose an opportunity of belittling American effort, even when aimed in the most commendable direction. Of Prof. Maisch, however, this cannot be said; all his energies were given—dedicated, indeed—to the enrichment of his adopted home, and whatever advance has been made in American pharmacy and pharmaceutical legislation has been effected very largely by the leaven of his individuality. He had "honors thrust upon him" from every part of the globe, in recognition of the faithful and painstaking labor which was everywhere characteristic of his writings; and even when he was upon what was to prove his death-bed, the President of the Pharmaceutical Society of Great Britain, Mr. Carteighe, brought to the Chicago meeting of the American Pharmaceutical Association the Hanbury gold medal for presentation to him. His death took place on

September 8th, at his residence, 753 North Fortieth street, Philadelphia, after a long illness.

Johann Michael Maisch was born on Jan. 30, 1831, at Hanau-on-the-Main, Germany, where his father, Conrad Maisch, was engaged in some branch of retail trade. Here it was that he received his early training in scientific studies, in mineralogy and botany. Although at the wish of his parents he first received his education with a view to entering the ministry, his predilection for the natural sciences finally determined the channel in which his life labors should be cast. This was partly decided for him also by other considerations, which compelled him to cut short his High School studies by selecting the occupation of a pharmacist in order to assure himself the means of subsistence. As a result of his participation in the Baden Revolution of 1849, he was forced to leave Germany, and he decided to emigrate to North America. On his arrival in this country he was employed in the capacity of assistant, first in Baltimore, subsequently in Washington, Philadelphia, and New York, and in 1856 he spent a few weeks in a chemical laboratory.

He began to furnish contributions to the *American Journal of Pharmacy* in the year 1854, and in this manner he made the personal acquaintance of Prof. W. Proctor, of the Philadelphia College of Pharmacy. In the same year he became associated with this gentleman in the editing of the *Journal*, and thus began the active literary career which continued unbroken up to his last illness. In the year 1859 he was elected a member of the Philadelphia College of Pharmacy, and the same year he acted as assistant to Edward Parrish in his School of Pharmacy for Medical Students. In 1861 he was appointed Professor of Materia Medica in the New York College of Pharmacy, which chair he held until 1863; during this time he was employed in the laboratory of Dr. E. R. Squibb, of Brooklyn, N. Y. In the spring of 1863, Maisch returned to Philadelphia for the purpose of establishing and managing the United States Army Laboratories, which were organized for the manufacture of such preparations as the Government thought it could more economically manufacture than buy in the open market. He continued in the capacity of technical director of these laboratories until the end of the war, and in the report submitted at the close of the year 1865 he showed that during the two and a half years a saving of over three-quarters of a million of dollars had been effected for the Government. A condensed extract from his statistics was published in the proceedings of the American Pharmaceutical Association for the year 1866.

Maisch had become a member of the American Pharmaceutical Association in the year 1856, and in 1860 he was chosen Reporter on the Progress of Pharmacy. Previously these reports had consisted of excerpts and notices which were thrown together in the most miscellaneous manner. Into his first report, however, submitted in 1862, covering a space of two years, Maisch introduced a systematic arrangement after the pattern of the Canstatt Jahresberichte, and this method has since been uniformly followed. In 1863 he was elected First Vice-President; in 1864 he was elected a member of the Executive Committee, and in 1865 Permanent Secretary. His election to the latter office was thereafter annually renewed, and he held the position at the time of his death.

After the close of the war—his services being no longer needed in the Government Laboratories—he opened a pharmacy in Philadelphia, and retained this for five years, but was finally constrained to dispose of the business in order that he might do justice to his literary labors and to the duties devolving upon him as a result of his connection with the American Pharmaceutical Association, and also his professorial duties in the Philadelphia College of Pharmacy. The latter institution had called him to the professorship of Pharmacy in 1866—a post which he resigned, however, to Prof. Parrish the following year, and in exchange he was appointed Professor of Botany and Materia Medica, which position he filled most satisfactorily up to the time of his death.

In 1867 he was instrumental in having passed in the meeting of the American Pharmaceutical Association for that year, resolutions tendering the assistance of the Association to the legislative bodies of the individual States of the Union in order that some legal regulation of the practice of pharmacy might be initiated. Up to that time there had been scarcely any trace of legislation in this direction. In order to render these resolutions as effective as possible, Maisch personally undertook to collect all the provisions respecting pharmaceutical matters which then prevailed in the various States. His report thereon appeared the following year, and in 1869 a statute was drafted by a committee, and recommended by the Association for legislative enactment. Since that time, laws have been established in nearly all the States, which now render the practice of pharmacy dependent upon a successful examination before an official State board.

On the resignation of Prof. Proctor, in 1871, as editor of the *American Journal of Pharmacy*, Prof. Maisch was elected editor of that journal. In 1829 the Philadelphia College of Pharmacy had undertaken the publication of a periodical which would embody the results of investigations and other interesting notes which it might be desirable to place on record for observation by the students of the college, either as original work, or as excerpts from other sources. This has been issued at regular intervals since the date we have mentioned, but in the year 1835 it assumed the title "*American Journal of Pharmacy*." Since 1854, Maisch published in this periodical almost all of his investigations that were not embodied in book form. His contributions and editorials were almost without number, and covered botanical, chemical, and purely pharmaceutical subjects, but in all these departments the most competent critics have frequently expressed their admiration of the exactness of his methods and reliability of his results.

Prof. Maisch has rendered the most efficient aid to the pharmaceutical world in publishing the most thorough methods for studying materia medica from the pharmaceutical standpoint. Recognizing in his labors the need of an English text-book of pharmacognosy, he had long contemplated the preparation of such a work, and his Organic Materia Medica, based upon the conditions of American pharmacy, at last appeared in 1882. After the lapse of ten years it has reached no less than its fifth edition, and each edition has been almost completely rewritten.

Prof. Maisch has been connected with three of the decennial commissions for revision of our United States Pharmacopœia, the first being that of 1860.

Prof. Maisch was the editor of the third, or last, revised edition of "Griffith's Universal Formulary." Twelve years before, viz, in 1848, he had discussed with his colleague, Ferdinand F. Mayer—whose name, by the way, is connected with the well-known iodine-mercury-potassium test for the quantitative determination of alkaloids—a plan for the preparation of a commentary on the United States Pharmacopœia. Mayer's death in 1849 prevented for a time the execution of the project; but although delayed, the work was subsequently resumed with some modifications, and completed at the beginning of 1879 by the publication of the almost classical work, "The National Dispensatory"—a stately volume of 1628 pages, the portion relating to therapeutics being furnished by Prof. Alfred Stillé, of the University of Philadelphia, Prof. Maisch furnishing the botanical, pharmaceutical, and chemical data. Three further editions of this work have since appeared, the latest being in 1886.

At the present moment of writing, we are not aware of the exact number of the many distinctions which have been bestowed upon Prof. Maisch at various times by pharmaceutical and other societies, but their number is legion. They have come not alone from societies in the United States, but also from other American countries, from Europe, and even from Australia. He was chosen an honorary member of the Pharmaceutical Society at Brussels, in 1867; similarly of the St. Petersburg Society, in 1868. In the year 1871 he received the honorary title of Doctor of Pharmacy from the Maryland College, and his *Alma Mater* conferred upon him the degree of Magister of Pharmacy in 1889.

We cannot conclude this sketch of the life and labors of one whom we have known so long without once more regretting the loss which the pharmaceutical profession has sustained in his death. Such men as he are not too plentiful in this country, and we sincerely hope that his mantle will fall upon worthy shoulders.

THE NEW PHARMACOPŒIA.

The Seventh Decennial Revision (1890) of the United States Pharmacopœia is now published, and we are right "in it," so to speak. Although it informs us on the title-page that it does not become official till the first day of January, 1894, it would be wise for every druggist to procure a copy immediately in order to familiarize himself with the changes and additions as soon as possible. By the way, we are pleased to notice that all articles of the seventh decennial revision of our Pharmacopœia are now to be called "official," and that we will soon see the last of the solecism "officinal" applied to substances or preparations described in this work. *Officina* is the Latin word for a store, and when the apothecary was both druggist and physician, and kept nothing but what was strictly orthodox medicine of that day, it mattered little whether his stock was called official or officinal. The ice-cream soda and cigars of our times are "officinal" because kept in the *officina* or store, but it requires no lengthy argument to show that they are not "official"—they are not recognized as medicines in our standard work of authority and reference in such matters.

There are more than a hundred pages of additional matter in the present edition, compared with that of 1880—and this, too, despite the fact that the dismissals are slightly in excess of the additions, there being 90 of the former and 88 of the latter. Without critically making any comparisons in the very short time which is available to us at this time of writing, we may take the increased number of pages as *prima facie* evidence that our 1890 Pharmacopœia is a superior work. To our personal knowledge—speaking from acquaintance with a few members of the Revising Committee—no pains have been spared in the really formidable task of incorporating in the pages before us the very latest chemical, botanical, and other scientific information. As an instance that comes to us at the moment, we would mention the matter of Jaborandi (p. 301). Our readers may remember that we drew attention to the statement of E. M. Holmes, Curator of the Museum of the Pharmaceutical Society of Great Britain, that the source of the ordinary commercial jaborandi leaves was not *Pilocarpus pinnatifolius*, Lem, as generally stated, but that it was from a plant which had not hitherto been described. His description of this new species, *Pilocarpus Jaborandi*, was only published in the *Pharmaceutical Journal and Transactions* of June 10th of this year, and yet we find the information duly recorded in the page we have above indicated.

Among the most notable of the additions are: Acetanilid, Aloin, Solution of Hydrogen Dioxide, Yerba

Santa (Eriodictyon), Menthol, Naphtol, Pancreatin, Pepsin, Cascara Sagrada (*Rhamnus Purshiana*), Salol, Glycerin Suppositories, Cramp Bark, Corn-Silk.

Among the articles dismissed, probably no one will regret that the Abstracts are here enumerated. Extract of Malt is, however, considerably used in some quarters, and we see no other reason for striking it off than the difficulty that exists in defining the article so as to be of exact limitation by easily-applied tests.

Our readers will do well to notice the changes in nomenclature that have been effected in the present edition. Carbonate of Sodium is now to be Sodium Carbonate; Bromide of Potassium, Potassium Bromide; similarly with all other chemical compounds the basylous or metallic component of the name must be placed first. This usage has, however, been adopted for some time by those acquainted with the newer chemistry. Arsenous Acid is now the adopted name of the article so long known as Arsenious acid.

Where changes in the strength of preparations have been made, they appear to be all in the one direction of making them more concentrated. Infusions and decoctions, however, are now directed to be of the proportion of 1 to 20 of drug, instead of 1 to 10 as formerly, although in the comparative table on page lviii they are made to appear as 1 to 5.

The Committee of Revision have published the book at their own expense, retaining its exclusive control and ownership. The excellent typography and binding are by the J. B. Lippincott Company, of Philadelphia. P. Blakiston, Son & Company, of that city, act as distributing agents.

Unless something unforeseen transpires, we shall publish next month a complete review of the work from several standpoints—chemistry, materia medica, etc.

SHABBY HOSPITALITY!

The National Wholesale Druggists' Association, all the world knows, comprises the flower of the drug trade of America. On its list of members is to be found, almost without exception, the name of every able, influential, and honorable wholesale drug merchant in the land.

At the last meeting of this body in Montreal, there was no little friendly rivalry amongst the representatives of various cities, each eager to secure for his home the honor of welcoming the N. W. D. A. at their next convention; and, finally, Detroit, whose claims had often been urged in previous years, but always withdrawn in deference to the more eager and insistent clamor of other cities, was chosen as the meeting place for 1893. By far the overwhelming majority of the regular and recognized jobbers in the Association voted for Detroit; the opposition to our fair city lay chiefly amongst the pharmaceutical and proprietary medicine manufacturers who, though permitted only by courtesy to enroll themselves amongst the jobbers, could not repress the envious and petty feeling that led them to oppose Detroit under all the pretexts with which they sought to mask their real hatred of a prominent local manufacturer.

Analyzing the final ballot of the Association on a meeting place for 1893, we find that the votes in favor of Detroit proceeded without exception from regular wholesale drug merchants. Excluding from the adverse votes the merest handful of jobbers who voted against Detroit, the entire remaining opposition proves to have been made up of the following motley elements: Dealers in patent medicines, makers of proprietary preparations, pharmaceutical manufacturers, and one publisher of an obscure pharmaceutical journal! The one conclusion to be drawn from this analysis of the ballot, he who runs may read.

Among the number who, on leaving Detroit for Montreal, announced their determination of urging the claims of our city, was Mr. D. O. Haynes, the publisher of the *Pharmaceutical Era.* What Mr. Haynes subsequently did at Montreal, what pressure he may have undergone from present and prospective advertisers, what grounds may have prevailed on him to change his attitude, we do not know with certainty; but on the best authority we are informed that Mr. H.'s ardor in behalf of Detroit underwent a sudden and radical transformation, and that no hint or help which he could lend the opposition was withheld. For this erratic conduct the gentleman doubtless had grounds which, to him, were good and sufficient. Desiring to be charitable and mindful of human frailty, we refrain from a too searching inquiry into his motives.

But now comes the publisher of the *Era*, who—mark you—is to be one of the hosts and entertainers of the National Wholesale Druggists' Association next month, and, in an editorial effusion which we reproduce on another page of the BULLETIN, declares, with truly virtuous and edifying indignation, that the Association, in the selection of Detroit, as in the choice of other meeting places in the past, "allowed itself to be pulled this way and that by the invitations and influence of manufacturing firms;" that the *expenses of the jobbers were defrayed by interested manufacturers as a bribe for their votes, etc., etc.*

Who did the "pulling and hauling" when Washington, Louisville, and Montreal were successively chosen—who the crafty and bribe-giving manufacturers were, whose interest in the selection of these cities was so great, we are at a loss to know. Perhaps our colleagues in Washington, Louisville, and Montreal will shed some light on the question, and tell us from what manufacturer's purse came the funds with which this alleged subsidizing was done.

The absurdity of such a statement with respect to the purchase of votes is its most effective refutation.

The character and wealth of the merchants who voted for Detroit render needless any vindication from such a besmirching charge. The jobbers of the United States are not the venal and paltry band that Mr. Haynes would paint them. The publisher of the *Era* may hold with Sir Robert Walpole that all men have their price, but he will hardly dare maintain that the price of the National Wholesale Druggists' Association is the wealth of any manufacturer.

A reckless charge which thus involves the good name and fame of one of the most reputable organizations in the land, would at any time call forth the reprobation of the sober and the self-respecting. But with what feeling shall we receive the speech of the host who besmirches his own guests—the individual who, not content with playing the recreant to the city of his home, now flings insult by way of welcome into the teeth of his prospective visitors? His implied reflection on local manufacturers we do not resent; they are abundantly able to care and battle for themselves, but in the name of Old Detroit and of the reputable men who will soon give pleasure and honor to our city by their presence, we enter our protest against such shabby hospitality and outrageously bad taste.

A DANIEL COME TO JUDGMENT!"

Among the uninventoried blessings in which the N. W. D. A. rejoices, its greatest treasure seems to be the sage counsel of the *Pharmaceutical Era*. We have long been aware that wisdom was born unto a benighted earth when the sapient publisher of the *Era* began his career as a journalist; the universe was shrouded in darkness until this luminary appeared, and a few beams of light he now graciously bestows upon the N. W. D. A.

In an editorial which we reproduce from the *Era* on page 425 of this BULLETIN, and which we commend as a delicious specimen of turbid and muddy prose, this pharmaceutical Daniel discourses sagely on the qualifications to be sought for in any candidate for the presidency of the N. W. D. A. Lacking experience in the elucidation of oracular wisdom, we leave our readers to construe the following delightfully murky passage, and meantime while Sir Oracle speaks let no dog bark!

> The N. W. D. A. has had good men for presidents, and will always have good men for presidents, as its membership is composed of good men, but all good men are not good presidents, and there are those in the Association who, perhaps, are better qualified for such positions than any who have yet held it.

The entire article is too transparent to hide successfully behind a thin pretense of concern for the welfare of the Association the real ill-will of the publisher toward the present incumbent of the presidential chair. Not daring to assail Mr. James E. Davis openly, knowing well that any reflection upon his fitness for the office would be resented by the Association, ***which elected him unanimously***, and yet itching to indulge in one fling at a gentleman who frustrated his own discreditable effort to select some city other than Detroit for the forthcoming meeting, the publisher of the *Era* takes refuge in covert insinuation and cowardly innuendo.

The sage advice which is thus benignantly bestowed upon the N. W. D. A. as a mask for a personal attack will be received at actual value, and unless we sadly err the self-chosen Mentor of the Association will soon be out of a job! And though there is wisdom in a multitude of counselors, the N. W. D. A. will not yet a while be forced to profit by the muddy and stupid commonplaces which the *Era* presumes to offer as the profoundest wisdom—to be hugged and cherished when selecting a president.

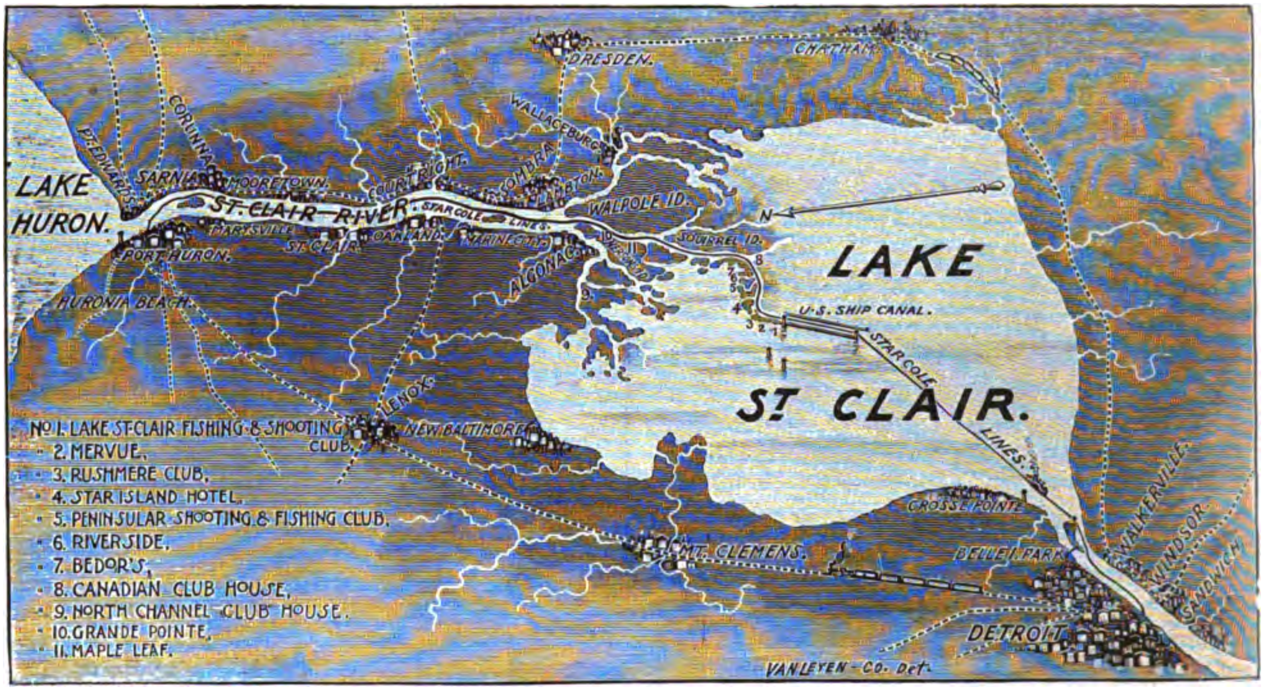
THE NINETEENTH ANNUAL CONVENTION OF THE NATIONAL WHOLESALE DRUGGISTS' ASSOCIATION.

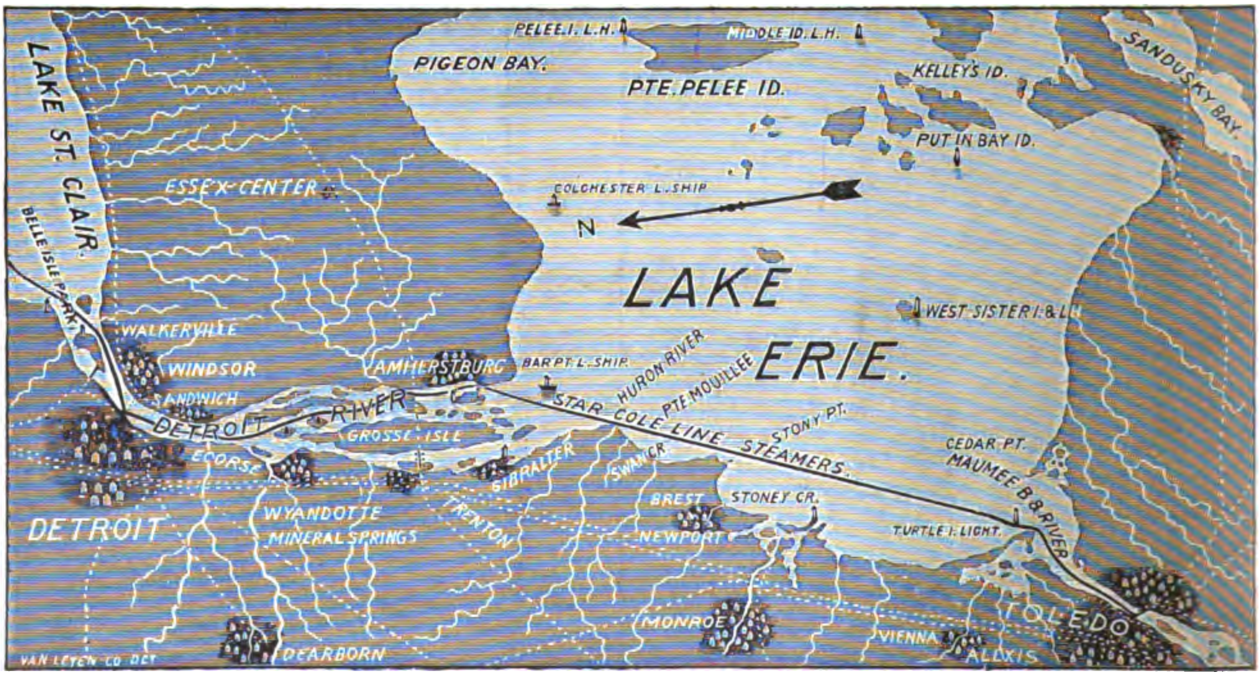
The National Wholesale Druggists' Association, as a consequence of action at Montreal in September last, will convene at Detroit on October 9th, to remain in ses-

ALANSON S. BROOKS, of the Wholesale Drug House of Williams, Davis, Brooks & Co., Detroit, Mich., Chairman of the Committee of Arrangements and Entertainment of the National Wholesale Druggists' Association.

sion until October 14th. The BULLETIN OF PHARMACY seizes this opportunity to extend to the delegates a most cordial and sincere greeting, and to express the hope that the weather may be such as to permit a proper enjoyment of the outdoor facilities for entertainment afforded by Detroit.

It is perhaps with pardonable pride that we point to the many inviting features afforded by our city and its surroundings, in relation to the entertainment of guests. As a convention city, Detroit, with due regard to its limited population, has made a most enviable record in the past, and this record is based largely upon its location





and natural characteristics. We point with pride to the noble river which flows rapidly past our shores, carrying upon its bosom a tonnage in fleets of steam vessels equal, it is stated by statistics, to that of the harbor of either Liverpool or New York.

Excursions from Detroit *via* the river to Lake Erie or Lake St. Clair ports are very delightful when the weather and temperature will permit.

VIEW OF DETROIT RIVER FROM BELLE ISLE PARK. The Steamer "Darius Cole" on its way to Lake St. Clair ports.

VIEW IN BELLE ISLE PARK.

While our business and municipal architecture is modest in character, and will perhaps bear no comparison with that of other more pretentious cities, we rejoice in broad, well-shaded avenues and streets, in our comfortable and cleanly residences, in our Island Park unique in its environment of water and in its primeval forest.

Detroit has a sufficient capacity in hotel accommodations for a city of its class, and in point of quality the Hotels Cadillac, Russell, and Ste. Claire are not excelled in the West. The Hotel Cadillac has been selected by the proper committee as the headquarters of the Association. It is well adapted for the purpose, and in its elegant and spacious parlors the business of the Association will begin on the evening of Monday, October 9th, at 8 o'clock.

THE DETROIT BOAT CLUB, on the North Shore of Belle Isle Park. In the distance, the Iron Bridge across Detroit River connecting the City with the Island Park.

ONE OF THE MANY PICTURESQUE CANALS IN BELLE ISLE PARK.

The Russell House, located on Cadillac Square, with the finest outlook in the city, is too well established in reputation to need comment from us.

VAN LEYEN-HENSLER DET.

The Hotel Cadillac. Selected by the Committee of Arrangements as the Headquarters of the Nineteenth Annual Convention of the National Wholesale Druggists' Association.

The Russell House. One of the oldest and most popular of Detroit's hotels.

The Hotel Ste. Claire is entirely new, was previously conducted on the European plan, but has recently been changed to the American plan, and offers elegant accommodations to its guests.

We believe we have not misapplied our space in incorporating a few views of Detroit and vicinity, but, on the other hand, that they will prove of interest to our readers.

THE HOTEL STE. CLAIRE, but a few weeks ago completed; formerly conducted on the European plan; now, however, like the Cadillac and Russell House, on the American plan.

A FITTING AFFILIATION.

Never did the old adage respecting the strange bedfellows of adversity receive a more laughable or a more appropriate exemplification than in the recent championship of Sir Knight "Sweet Quinine" Stearns on behalf of a kinsman in distress—"Animal Extract" Hammond. Destiny has dealt the latter many a severe blow, but it treats him savagely in his old age when it assigns to him for an advocate the expelled President of the American Pharmaceutical Association. We tender the inventor of Cerebrine our sympathy; culpable and guilty he has been, indeed; but such a refinement of retribution no crime can merit.

Delightful affiliation! Unholy copartnership! Hammond & Stearns! Stearns & Hammond! Cerebrine and Sweet Quinine! Medulline and Cherry Pectoral (or something which is "just as good")!

The touching tableau needs one more figure to be complete: Hammond holding aloft an illuminated scroll on which is inscribed his masterly defense of non-secret remedies.

Yet a little while and we shall hear the reciprocal prayer of these two worthies, each imploring the other to be silent and uttering aloud: "Lord, deliver me from my friends!"

THE BULLETIN extends congratulations to Dr. Charles S. Hazeltine, senior member of the well known wholesale drug firm, of Grand Rapids, Mich. As Consul to Milan the Doctor will be afforded an excellent opportunity wherein to gratify in many respects his exceedingly artistic tastes. Permit us to again extend our best wishes, and, in the words of Joe Jefferson, Doctor, "May you lif long and brosper."

A PAN-AMERICAN PHARMACOPŒIA.—Two resolutions were presented to the Executive Committee of the Pharmacological Section of the Pan-American Congress, and accepted, after being indorsed by the President and officers: one for establishing a commission for the investigation of South American drugs; a second commission to compile and publish a Pan-American Pharmacopœia.

PRACTICAL PHARMACY.

CHANGE THE LAWS.[*]

BY W. BODEMANN.

A few years since, I brought an ounce of Antipyrin from Germany. Subsequently, during correspondence with the "sole lessee" (!) of the drug, I was dumbfounded by the information that I had no right to either sell, give away, or prescribe for myself the antipyrin I had brought from abroad.

After such information I naturally looked up the law on the subject, and became speedily satisfied that according to statutory declaration I could be held legally responsible if I dared to ingest a portion of antipyrin that had not paid a royalty to the "sole lessee" of this drug for the United States.

The laws of this country are such that the name, the process of manufacture, and the finished product are covered by patent enactment.

What is more remarkable, the founder, or discoverer, of antipyrin could not obtain such three-fold protection in any of the effete monarchies of Europe—he had come to the "land of liberty," "the land of the free and the brave," where the bold, grasping monopolists are at liberty to hold up the peaceful wanderer and cry, "Give me your purse—pay me a dollar for what the benighted subjects of darkest Europe pay only twenty cents for."

Take Sulphonal, for instance: there are four foreign manufacturers who, knowing the glorious possibilities of trademarking and patenting in the United States, came here, obtained protection on the name, product, and process of manufacture, formed a company, selected a president and agent, and then proceeded to create a demand. Note that in Germany the drug sells at twenty-five cents an ounce, and that the duty when brought to the United States is only 25 per cent.; but the added protection enables these houses to realize $1.35 per ounce.

Just so, Phenacetin costs 33⅓ cents in Germany—$1 here; antipyrin, 73 cents—but sells here for $1.40.

It occurs to me that here is an inviting field of work for the American Pharmaceutical Association. By persistent effort and unity of purpose, surely this commerce can be regulated by statutory enactment—but by-laws, resolutions, and debates will never have any effect. As matters now stand, the trademark octopus constitutes absolutely a bold, legalized robbery—a form of swindling that exceeds even the crime of the foot-pad and road-agent. Surely the American Pharmaceutical Association in an effort to right this wrong could depend upon solid support from the people.

I believe foreign countries draw the line on articles used in the healing art, and refuse patents to those that constitute absolute remedies—at least this is true of France.

One is fairly bewildered at the mass of fraud, humbuggery, and charlatanism that has been developed in the trademark laws—*nomina odiosa sunt!*

It is not necessary to specify singly each article, except to illustrate the general argument, but if Listerine, Bromidia, Succus Alterans, and other of the ilk, are in consonance with their published formula, then any honest pharmacist could furnish such at half the price demanded. But if the compounds resulting from such formulæ are not like the trademarked articles, either the formula must be wrong, or the proprietor does not manufacture from the formula as published.

Look over the field; the number of trademarked preparations is simply legion. Is it not astounding? The pharmacist is bound hand and foot—fairly tied down. He is obliged to keep the doubly and trebly protected articles, while he could better satisfy the public and obtain much better returns to himself if he were at liberty to apply his own skill.

The stupidity of the great bulk of alleged physicians is met half-way by the cupidity of the shrewd charlatans: thus it has become a notorious fact that any fraud can be "made to pay." Any irresponsible concocter will find experimenting physicians ready to employ (if properly advertised), and then the thing is at once a success; but first all honorable competition must be at once barred out by the monster "Trade Mark."

There are no legal enactments or series of enactments that furnish more glaring impositions than those pertaining to that same trademark. It is a notorious fact that even among the so-called reputable physicians the Keeley Gold Cure met with its most credulous admirers; even Brown-Séquard challenges the gullibility of the medical public by offering *elixirs ad longam vitam*, made up of nothing but nuts and gall—more gall than nuts, apparently. It makes no difference how high the source; the higher the apparent authority, the greater the charlatanry, and we have all the more reason to fervently pray to be relieved from our "eminent" or so-called "eminent" physicians, and that they shall keep their fingers out of the nostrum business; for anything and everything will find believers, and it is an everlasting disgrace to the medical education of America that trademarks find such general defense and adherence.

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[*] Read before the Legislative Section of the A. P. A. Convention at Chicago, August, 1893.

I have no hesitation in declaring that any physician who prescribes a remedy with the composition of which he is not familiar, is *per se* a fraud and impostor. Should a regular physician employ one of the out-and-out patent nostrums, even the public would call him a swindler or an ignoramus. Look over the prescription file of any pharmacist, and how many prescriptions will be found that call for trademarked and secret remedies, fakes, and frauds! Unfortunately, the majority are of this class.

I really believe if an "eminent" impostor should promulgate a story of fifteen years' research, and the employment of at least three living pupils of Liebig and a couple of direct lineal descendants of Brezelius and Scheele in his laboratory, that he would find men willing to prescribe even something like this:

> **HAMMONDINE.**
>
> Hammondine will produce that peculiar character of brain essential to propagate the faculty of founding a new town, more prosperous than Hammond, Indiana. It is made by macerating the offal of the blood-and-button factories at Hammond for thirteen years, and then redistilling the finished product in the most improved slaughter-house of the nineteenth century.

Now let the inventor claim that the United States Army surgeons have experimented with this remedy on the plains of the Wild West; let some medical journal dare dispute the value of the remedy so as to open the path for argument in several journals, then the nostrum will at once be sold in quantities sufficient to satisfy the cravings of the would-be founders of the new factory, and speedily enable the great inventor to retire with a fortune before the falsity of the trick is found out.

One may laugh at such exaggerations, but if one-hundredth part of the attention had been paid to the manipulation of the trademark and patent laws that has been to the cutting and maintaining of prices, this rodent ulcer upon the body politic would not have absorbed all the best life-blood of the pharmaceutical profession, and besides usurped the greater portion of the body of materia medica.

I suggest that the A. P. A. clasp hands with the International Pharmaceutical Congress, and endeavor to form a congress that will return to the consideration of common sense and old-fashioned honesty and advocate the abrogation of the objectionable features of our present patent and trademark laws.

SULPHURIC ACID.

BY THOMAS WARWICK.

In the manufacture of soda-water, the use of some acid is necessary for freeing the carbonic acid gas from the base with which it is united. Three acids have been used at different times for this purpose, namely: sulphuric, hydrochloric, and tartaric acids. The tartaric acid, owing to its expensiveness, is, of course, only used in cases where the soda-water is manufactured on a small scale, as, for instance, in what are known as "family machines" or seltzogenes. Aside from its expense, however, this acid has another great disadvantage, namely, that the product of its union with bicarbonate of soda is a tartrate of soda possessing purgative properties, and no satisfactory means have yet been devised for eliminating this tartrate of soda from the finished product. Hence, under existing circumstances, these family machines can scarcely be recommended.

Hydrochloric acid (popularly known as muriatic acid) also possesses great disadvantages for soda-water purposes. Its advantages are that the chloride of calcium formed by its action on carbonate of lime is readily soluble in water, so that but little agitation is required. Moreover, the residue formed—the chloride of calcium already mentioned—can be readily sold for various purposes, and hence this acid is on the whole cheaper to use than sulphuric acid. Its disadvantages, however, are so great as to entirely preclude its use. Not only does it give forth chloroformic vapors exceedingly bad for the health, but it forms with lead, tin, iron, and copper injurious compounds which are often highly poisonous. It also gives the carbonic acid gas a taste and odor which no purification can completely remove, and this of itself would be sufficient to condemn its use for soda-water purposes. Sulphuric acid is therefore the acid best adapted for making sparkling beverages, and even when this is employed some care is necessary to obtain a good quality of acid and to prevent the formation of foreign gases in the generator.

Sulphuric acid is the strongest and most important of all the acids. The amount used yearly in the various manufactures is almost incredible, and there is scarcely a branch of industry in which this acid does not play an important rôle, from the manufacture of soap, paper, and glass to the production of parlor matches and anilin dyes. Aside from its cheapness and strength, sulphuric acid possesses another valuable property in the fact that it is dibasic, that is to say, it can form two different salts with the same metal, in one of which there is relatively twice as much of the metallic element as in the other. Thus a molecule of sulphuric acid united with one of caustic potash (KOH) produces an entirely different salt than when united with two molecules of the caustic potash.

Sulphuric acid (popularly known as oil of vitriol from its oily and glassy appearance) appears under several distinct forms, usually depending upon the amount of water which it contains. Thus the anhydrous sulphuric acid contains no water whatever, and consequently becomes a solid, in which state it can be handled with impunity, but upon the addition of water all its latent properties at once become manifest again, thus rendering it exceedingly dangerous.

When one molecule of water is added to one of anhydrous sulphuric acid (SO_3), we have the ordinary commercial sulphuric acid, the one in most common use and that serves in the manufacture of soda water (H_2SO_4). If a second molecule of water be added to this acid, we have $H_2SO_4.H_2O$, and if a third molecule of water be added, $H_2SO_4.2H_2O$; and other hydrates can in like manner be formed by successive additions of water.

A good sulphuric acid should be almost colorless and odorless, but the commercial sulphuric acid, owing to its cheapness, cannot be manufactured with sufficient care to avoid all impurities, and hence the ordinary acid of commerce has a more or less pronounced brownish color due to the impurities present. As to whether or not these impurities will render the acid worthless for soda-water purposes, this, of course, depends upon their nature, for obviously if the substances present are inert they will in no way impair the value of the acid.

The ordinary commercial sulphuric acid (H_2SO_4) contains 22 per cent. of water, and has a specific gravity of 1.8433. At this density the acid weighs one pound and fourteen ounces to the pint, that is to say, about fifteen pounds to the gallon, or 112 pounds to the cubic foot. Of course these weights vary somewhat for acids of different density, and the weight is sometimes as high as 115 pounds to the cubic foot. The density of sulphuric acid is best tested by Baumé's acidometer, the normal commercial acid for soda water purposes showing 66.6° on Baumé's gauge. The following table shows the density of sulphuric acid of different degrees strength at a temperature of 15° Centigrade (61° Fahrenheit), as calculated by Bineau:

Degrees Baumé.	Specific Gravity.	Per cent. of H_2SO_4 present.	Per cent. of SO_3 present.
50	1.530	62.6	51.1
51	1.563	65.4	53.4
54	1.597	68.4	55.8
56	1.630	71.6	58.4
58	1.671	74.7	61.0
60	1.711	78.0	63.6
61	1.732	79.8	65.1
62	1.753	81.7	66.7
63	1.774	83.9	68.5
64	1.796	86.3	70.4
65	1.819	89.5	73.0
66	1.842	91.3	74.5
66.6	1.857	100.	81.6

Of course, while in some cases a low indication on the acidometer, showing the presence of considerable water in the acid, proves that there has been intentional adulteration, in many cases the presence of the water may be due merely to the hygroscopic properties of the acid. The fact is that sulphuric acid is so hygroscopic that if a carboy be left uncovered it will rapidly absorb moisture from the air, and will thus sometimes greatly increase its own weight, so much so that anhydrous sulphuric acid will sometimes absorb moisture to such an extent as to increase its weight ten times and its volume thirty times. For this reason it is necessary for the druggist to keep his carboys tightly closed to prevent the acid from spoiling, and he should moreover test every carboy when first opened, for otherwise he is apt to do the manufacturer an injustice.

It is this hygroscopic property of sulphuric acid which is utilized for drying gases of all kinds. For instance, in the manufacture of liquefied carbonic acid gas, it is often necessary to dry the gas before attempting to liquefy it. This is accomplished by passing the gas through pieces of pumice-stone saturated with sulphuric acid. The acid absorbs the moisture of the carbonic acid, and the dry gas is then ready to be liquefied.

One important phenomenon which attends the absorption of water by sulphuric acid, is the evolution of heat. To the uninitiated it is a matter of constant marvel how cold acid and cold water when mixed together can produce heat, but to the druggist there is, of course, nothing surprising in this fact. He is aware that in almost all chemical combinations a certain amount of heat is evolved, and he knows that the union of water and acid is in part a chemical operation. In fact it does not surprise him to learn that if four parts of sulphuric acid at the freezing-point (32° Fahr.) be added to one part of water at the same temperature, the mixture will have a temperature of 212° Fahr. Yet it is nevertheless a wonderful fact that two liquids at freezing-point can thus be made to boil by simply pouring one into the other!

When a larger amount of water than that above mentioned is added to the acid, however, the amount of heat produced rapidly decreases for each successive addition. In fact, according to the authority of the chemists who have studied the question, "the heat evolved on combining one molecular weight of H_2SO_4 with one of water amounts to 69.7 Centigrade units. Decreasing quantities of heat are evolved for successive additions of water until 120 molecules of water have been added."

It must also be remembered that aside from the heat produced by the chemical combination, there is also a certain amount of heat due to the fact that the water and acid when combined occupy a smaller space than when separate. Condensation, of course, always produces heat, and hence the heat produced is due partly to chemical action and partly to condensation. The condensation is greatest in the tri hydrate ($H_2SO_4.2H_2O$), in which case it amounts to as much as 8 per cent.

The fact that sulphuric acid when combined with water liberates a large amount of heat, is of practical importance to the soda-water manufacturer in more ways than one. In the first place, it naturally follows that in the generator a considerable amount of heat is evolved, and, as I have shown in previous articles, this heat prevents the carbonic acid gas from being as thoroughly absorbed by the water as it should be. It is just here that the manufacturers of liquefied carbonic acid claim the greatest point in their favor, for the liquid carbonic acid, far from producing heat, produces a large amount of cold, that will, with proper care, give an added pungency to the soda-water made. Those who make their soda-water from acid and marble-dust, however, can secure water almost if not quite as pungent by cooling down either the carbonic acid gas or the water used in their portable fountains, and even in some cases they cool down the generator itself by sprinkling the outside with cool water during the process of charging. In fact, I have known certain authorities to recommend mixing the water and sulphuric acid together a few hours before they are needed, and then letting them cool down before making a charge. This, however, only partially does away with the heat; moreover, it reduces the strength of the acid considerably, and the danger of accidents through carelessness is somewhat increased. Hence the plan is not to be recommended.

A second point of practical importance which hinges on the fact that sulphuric acid and water when combined evolve a large amount of heat, is that the operator must always be careful, when mixing the two, to add the acid to the water, and not the water to the acid. In a case which came to my notice, the neglect of this precaution came very near causing a serious accident. A carboy of sulphuric acid had fallen from a truck through the carelessness of the driver, and as a natural consequence the carboy had broken and the acid had collected into a pool. Fortunately those in the neighborhood, understanding the dangerous nature of the liquid with which they had to deal, had been nimble enough to jump out of the way in time to avoid being spattered by the acid. They could not, however, leave this pool of acid in the street, where it might cause serious accident, and the driver therefore innocently decided to get rid of the corrosive fluid by washing it into the sewer. He accordingly borrowed a hose and threw a stream of water full upon the acid! The result may be easily imagined. The contact of the first jet of water developed so great a heat as to suddenly turn the water into steam. A loud explosion instantly followed, a cloud of steam arose from the pool, and particles of sulphuric acid were scattered with great force in every direction. I am happy to say that no one was seriously injured, but several suits of clothes were spoiled by the acid and a number of people were slightly burned. The damage might, however, have been serious, and hence I would strongly recommend all druggists and others who have to mix sulphuric acid and water to be exceedingly cautious in doing so, and to be particular to add the acid to the water by slow degrees, but never to add the water to the acid. It may seem a nice distinction, and to the uninitiated may seem like an absurd trifle, but the greater my experience in the soda-water business the more I am convinced that the most important part of the business is made up of just such trifles; and reasoning by analogy, I am almost willing to believe that in all human affairs it is the smallest trifles that have in reality the greatest importance.

We now have to consider the third point in which a knowledge of the fact that water and acid when mixed will produce heat, can be turned to practical account. I refer to those cases in which the druggist in his manipulations chances to burn himself with sulphuric or other corrosive acids.

These burns are excessively painful, and are doubly dangerous from the fact that they are not mere burns, but are a combination of a burn and a wound, for while enough heat is generated by the contact of the acid with the moisture of the skin to char the wound, there is at the same time a direct chemical combination of the acid with the tissues. The result is a compound wound, so to speak, exceedingly painful and very slow to heal.

The best treatment for a sulphuric-acid burn is to plunge the burnt part at once into a pail of water, or to hold it under a wide-open faucet of water. This will afford immediate relief. It is important to remember that the addition of a small amount of water to the wound will only make the sulphuric acid burn more deeply into the flesh, whereas when a large volume of water is added at once the dilution takes place with very little evolution of heat. As to the various other remedies recommended, such as washing the wound with ammonia, or applying powdered bicarbonate of soda, etc., these are so slow in their action as to be of little value, and some of them even serve to increase the action of the acid on the tissues. Moreover, they are seldom at hand, whereas a copious supply of water can usually be obtained in any factory.

Before leaving this branch of my subject, I wish to make some remarks upon a point which has probably puzzled many druggists, namely, the fact that in charging a generator, the acid chamber will become very much hotter than the generator body, whereas, as the acid comes into contact with water only in the generator body, it would seem as though the heat should be evolved below. This is indeed the case, and the fact that the acid chamber becomes hot when undiluted acid is used proves conclusively that there is some mistake made in charging, and that water is in some way carried up into the acid chamber. This may occur in several ways. Either too large a quantity of materials is put into the generator body, causing an overflow into the acid chamber; or else, what amounts to the same, some of the spent materials may have caked in the generator, reducing its capacity, or the lining may be collapsed, producing the same result. But by far the most frequent cause of water finding its way into the acid chamber is that the acid is let down too quickly in charging, and that priming or boiling over of the contents in the generator follows, owing to the too rapid liberation of carbonic acid gas. It will be seen from this, that if a druggist finds his acid chamber getting hot while making a charge, he may at once rest assured that something is wrong, and he may also be certain that water in some manner or other finds it way up into the acid.

(*To be concluded next month.*)

SUBSTITUTION.*

BY ADDISON DIMMITT.

This word is derived from the Latin word *substitutum*, meaning putting under; or, in the sense we use the word, replacing a given thing with something less valuable, either in its effects or cost.

In pharmacy it is a practice that should be condemned by all druggists, and I think it is by all honorable and just members of our profession. Understand me, I refer to dishonest substitution, for in a case of emergency it may become necessary, or when it is impossible to find the article prescribed, and with the consent of the physician it is permissible. This kind of substitution we may call legitimate.

Let us view the evil results or effects of substitution from the standpoint of all parties concerned, the patient, physician, manufacturer, and druggist, and show, if possible, that it is detrimental to the interests of all.

The Patient.—The effect of substitution on the patient is the most vital point we have to consider, as it may be a matter of life or death to him.

If it be substitution in a prescription, see what might be the effect. If at a critical period in the disease, when life hangs by a thread, and the medicine does not have the expected effects, death is the result; or in ordinary cases, if the patient does not feel any beneficial effects, he becomes disheartened, loses confidence both in physician and medicine (and, as we all know, without faith little good can be accomplished), and the recovery is much retarded.

Then we have to consider the expense the patient has incurred. He is paying the physician for advice and the druggist for something he does not get, and the loss of time from his labor, which perhaps would not have occurred if the druggist had not substituted.

The Physician.—The physician informs himself on the therapeutic value of a drug, chemical, or proprietary preparation, as it may be, by reading in the different journals or circular matter the opinions of others on the effects and benefits to be derived by the use of this particular remedy. He prescribes it in the first case he may have where its use is indicated, and awaits results with interest.

The prescription has been taken to an unprincipled druggist who substitutes; the effect is not what has been claimed for it; he naturally thinks it the fault of the remedy, and condemns it at once; or if he has used the preparation before and was positive of the results, he knows it was the fault of the druggist, and places the stigma where it justly belongs, and perhaps for the misdeed of this one druggist the entire profession is condemned.

So you see by this illustration that a physician's skill, efforts, and intelligence are all wasted by the effect of substitution, and possibly the loss of a very remunerative practice, as that often depends upon the success of the remedies he prescribes.

The Manufacturer.—The manufacturers of chemicals, pharmaceutical or proprietary preparations employ chemists at a large salary, who are thoroughly educated in the special line of goods their respective houses manufacture. They devote their entire time and attention to perfecting old formulas or developing new and improved ideas.

After doing this the manufacturer goes to great expense in getting the goods before the public, or medical profession, as it may be desired; then, if the article be one of merit, it will soon meet with the success it deserves.

How does substitution affect them? First, if it be a chemical or pharmaceutical preparation, the physician is the one to whom it is presented. He gives it a trial. Substitution is practiced; the effect is not what was claimed for it. The physician condemns it at once, discourages its use by his brother physicians, and loses confidence in any other preparation this house may put on the market. If this should occur in several instances, he loses faith in all progressive ideas, and drifts back to calomel and rhubarb that were taught him probably twenty-five years ago. So the manufacturer has not only lost the sale of the preparation, but a friend in the physician.

The classes of manufacturers that suffer most by substitution are those making proprietary or patent preparations. They have to contend with the line of remedies of like nature that the retail druggist prepares and substitutes for their goods; or, if it should be an unscrupulous druggist, he might sell an imitation prepared by some piratical, non-secret house, whose method of doing business is to imitate, as near as possible, the popular remedy of the day without laying themselves liable under the law. Their full intent is to deceive the public and take advantage of the demand, created by advertising, for the remedy imitated.

Do you not think, brother druggist, that the manufacturers are rightfully and justly entitled to the profits derived from the sale of an article they have originated, and for which they have created a demand? If this profit be taken from them, there is not the same incentive to continue in the march of progression; for you know that the pecuniary advantage derived thereby is the motive power, and I am afraid we would find very few, if any, who are philanthropic enough to work for glory alone.

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* Read at the annual meeting of the Kentucky Pharmaceutical Association, May, 1893.

The Druggist.—This paper, as I originally stated, only applies to those druggists who substitute, having no compunction as to the medicinal effect, their own reputation or that of the profession they do so little credit. In our business, I believe, and am glad to say, that this class of men is decidedly in the minority.

The incentive for substitution by druggists, as we all know, is a *greater profit.*

Let us look at it from a strictly financial standpoint, aside from the moral view of the question, and see if it is more profitable or not.

Suppose a druggist buys only the very cheapest, represented by an inferior class of goods, that is obtainable; he does not consider quality, his idea being that the public is ignorant concerning drugs. He thinks it is the cheaper prices people want, and that they will always come to him because he sells cheaper than his competitors.

Then, on the other hand, another druggist is extremely careful in the selection of his stock, watching and examining every article that comes into his store, buying only from those in whom he has confidence. It is quality he wants, and he thinks the best is always the cheapest. He does not consider his neighbor in pricing his goods, but makes a fair, legitimate profit that is consistent with the quality of the drugs he sells.

Which method of doing business is most profitable in the end?

It is a known fact that the American people, as a rule, are easily humbugged. They always want something for nothing. Their eye is caught by glaring advertisements of cheap prices. But they are too smart to be caught twice by the same trick, especially on a matter of such vital importance to them as pure drugs.

Do you think a man would go to a drug store a second time where he had not received pure drugs, what he asked and paid for the first time? I answer, No; at least it is not reasonable to suppose he would. Therefore I contend it does not pay a druggist, from a profitable or financial standpoint, to substitute cheap and inferior goods for those which may cost more but which are pure.

Now let us moralize a little on the subject:

The druggist who will sell you inferior drugs will substitute or take an unfair advantage of you whenever the opportunity presents itself. In a very short time all with whom he comes in contact will find him out. His methods are dishonest, and he is not to be trusted. His natural trade drifts from him; he has lost the respect and confidence of all. The physicians shun his store and advise their patients not to deal there, as they can not get pure drugs; while the druggist who is fair and honorable in his dealings, and who keeps nothing that would reflect discredit on his business, or the reputation of the physician, wins the confidence and respect not only of his immediate trade, but attracts from his neighbor. The physician places the utmost confidence in him and recommends his patients to go there, for he knows they will get what he prescribed and can depend on the results.

I believe the public is rapidly becoming educated to the point of selecting their druggist with the same discretion and judgment they use in the choice of their physician, and the druggist who conducts his business honestly and conscientiously will be fully appreciated by the desirable trade.

Another point frequently advanced by druggists as an excuse for substitution is that physicians prescribe every new preparation that is called to their notice. They specify a certain make, when the druggist may have in stock his own or some other make that is equally efficacious. It is a great temptation to substitute, for you all know it may be the only prescription he may receive for that particular make, and the remainder of the package is an entire loss. This condition is to be deplored, but for the present we have to submit as gracefully as possible. The only proper thing to do, if possible, is to get the preparation, charge near cost, so as to make yourself safe, then trust in the Lord to sell the rest —but under no condition or circumstances substitute. Then you have done your duty to patient, physician, manufacturer, and druggist.

HOW TO PREVENT IT.

It is very easy to see the evil effects of substitution, but to correct this evil is a very difficult matter.

We could perhaps formulate a State law that would cover the point, and with heavy penalty attached might have some effect, but even that would only be an assistance, not a cure of the evil. If a man has a desire to practice fraud he will in some way accomplish his ends, whether by foul means or otherwise.

I believe the only and true way to correct this practice is to show the druggists (who are as a class intelligent men) the amount of unnecessary suffering it causes the consumer, the reflection on the reputation of the physician, the injustice done the manufacturer, and that it is dishonest for the druggist and not profitable in the end.

Let the pharmaceutical journals and druggists' associations take up the fight and push it into the enemy's camp; and if the battle be waged with unceasing energy and vigor, I believe that right and justice will in the end prevail, and in a short time substitution will be a thing of the past.

Let us have more faith in our fellow-men, for that is the foundation of all success in life. Let us hope our brother druggists will see the error of their way and join us in our efforts to do right. Let us be charitable, say no evil of our neighbor. If he talks unfairly of you, rebuke him by speaking well of him.

If we will observe these axioms we will find more harmony and good feeling existing in our business relations than was ever known before.

Louisville, Ky.

SHOULD CANDIDATES FOR GRADUATION IN PHARMACY BE ABLE TO MAKE ALL PREPARATIONS, A PROCESS FOR WHICH IS GIVEN IN THE UNITED STATES PHARMACOPŒIA?*

BY PROF. L. E. SAYRE.

In order to discuss this, it is necessary to define the qualifications of a candidate for the degree of Graduate of Pharmacy, at least so far as his knowledge and skill of and in the manufacturing of pharmaceutical and chemical preparations are concerned. In order to ascertain what his status should be in this direction, it is of course natural that we should look at it from the standpoint of the educator. I do not mean by this that we should take a one-sided view. The student who becomes a candidate for a degree, and the educator who has instructed him, are both responsible to the public, which expresses itself in no uncertain tones through the medium of legislative enactment, demanding that the compounding of medicines be restricted to qualified persons. The educator is keenly alive to this sentiment, and is less likely to take a narrow, one-sided view than the student or the pharmacist himself. What constitutes thorough knowledge in pharmacy is of course open to debate, but in the above question we do not have this to consider. We have to consider whether a practical knowledge of the Pharmacopœia or a certain prescribed amount of skill is essential to the student's proper education.

It may be surprising to many to learn that there are those in the craft who deny the necessity of what we understand as special training, and almost ignore the value of that skill in practical manipulation in the pharceutical laboratory which the average educator upholds as essential; but I regret to say there are not a few who, pursuing pharmacy "for the money there is in it," look askance at what is called science or skill in the profession. To illustrate this, I cannot do better, perhaps, than to transcribe the very words of a fair representative of this class as I find them in a pharmaceutical journal. They are as follows:

"The drug business is essentially mercantile. It is not confined to dispensing drugs on physicians' prescriptions. Success depends then on doing business on business principles. Druggists in these days are in danger of being too scientific. One of the most successful business men in New York, when interviewed lately with regard to making money, said that in his experience he had found that too much technical education was not profitable, and that, as a rule, college education did not qualify a man so well for making money as contact with the world. In Germany pharmacy has become so scientific that the Government has been obliged to grant subsidies to maintain it. . . . . . It is impossible to carry on the drug business on ultra scientific principles, and make it pay. . . . . Now, if you want to make money in the drug business, you must sell what people want and keep up your business. It is a very nice thing for a man to be a Ph.G., and try to pass for a great man, but there is no money in it. A man may look as wise as an owl, but it won't pay his bills. What you want is to sell your goods to the people and get money for them. . . . . I think it is better for the druggist to be a merchant than a manufacturer. . . . . People will not pay a storekeeper much for professional knowledge."

"Pharmacists" such as the above sentiment indicates, would most likely take a decided negative position with regard to the question under discussion. They "can buy ready-made goods for less than the raw material costs," etc. If I were to assume that the position taken by such men is worthy of a moment's consideration, I might take time to discuss it; but with such men it is useless to argue, and to debate the question from their standpoint would only be taking up valuable time of the body before whom this paper is read. He who follows pharmacy solely as a *business*, should not attempt to discuss what is essential to pharmacy as a *profession*. Nor should his opinion have any weight as to the qualifications of candidates for professional honors in pharmacy.

But there are pharmacists worthy of higher recognition who say that the details of the business are so great that they find little time for laboratory work, and as they can buy, at present, very advantageously, most of the pharmacopœial preparations, they do not see the necessity of making anything more than the simplest preparations which have to be made in the ordinary course of the trade—all of the so-called "practical skill" in pharmacy they are more than willing to hand over to the manufacturer. These are the men whom the manufacturer "delights to honor." If all pharmacists were like this man, what a clean sweep the manufacturers would have! The policy and destiny of pharmacy would be entirely in their hands. I do not say this to the disparagement of the manufacturer. I do not believe that the fair-minded manufacturer wants to control the policy or the destiny of pharmacy; if he have the good of the profession at heart, he would rather "delight to honor" those who are able, and who stand ready, to control the policy and shape the destiny of their profession. The fair-minded manufacturer is ready to aid, but not anxious to usurp the prerogative, the jurisdiction, the authority of, the professional pharmacist. Students with the ideas of this pharmacist instilled into them are apt to regard the time spent upon the practical part of their course of study as time almost wasted; at least the question of the value of practical laboratory work is an open one to them, and they treat the laboratory training required accordingly. It is scarcely necessary for me to say what my views are regarding pharmacists who instill such ideas —men who wear a professional air and inculcate non-professional principles. The ethical spirit of such men may be professional, but it seems to me their position practically as pharmacists is inconsistent, if not wholly hypocritical.

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* Read before the forty-first annual meeting of the American Pharmaceutical Association.

For one to become a competent dispenser of medicines, it is not enough merely to handle and read about the articles one dispenses. An intimate acquaintance with manufacturing processes such as comes to one in actually making the preparations, is essential to proper and thorough training. One so trained becomes a critic —an authority, in a certain sense—as he should be, in judging, as a pharmacist, of the value of the preparations he dispenses.

A rather amusing example of the cost of ignorance came under my personal observation when in business in Philadelphia. A resident physician determined upon making some glycerite of tannic acid which he had been buying in half-gallon lots. He bought the tannic acid and glycerin, and mixed the two. To his surprise, they did not at once form a clear mixture. He became alarmed, and without waiting for counsel (or the critical inspection of other physicians of the hospital staff) he threw the whole (half gallon) away. I told him, if he had waited a few hours the whole liquid would have become as transparent as that which I had furnished. "Well," said he, "I had never made the preparation before, and when the thing did not turn out right I distrusted myself and the preparation."

Every one must admit that one cannot have too wide and intimate acquaintance with processes for making pharmaceutical and chemical preparations; but there are certain preparations which cannot be thoroughly known without making them for one's self. Where to draw the line for practical training it is difficult to say, but certainly one should at least be able to make all preparations a process for which is given in the United States Pharmacopœia.

It seems to me that the obligation of the instructor and of the student could not be cancelled with less work on the part of both. It is true that less instruction might be given and received; few would be the wiser; but I claim that he who presents himself for public patronage and recognition as a pharmacist, must recognize the peculiar obligations (perhaps unwritten, but none the less binding) which the profession carries with it. And he who disregards these obligations is sinning against light of the most unmistakable clearness.

Lawrence, Kansas.

SHOULD ANY CANDIDATE BE PERMITTED TO GRADUATE IN PHARMACY BEFORE HE IS ABLE TO APPLY THE TESTS AND ASSAYS OF THE UNITED STATES PHARMACOPŒIA?

BY DR. WILLIAM SIMON.

At the outset I will say that there is no doubt in my own mind that this query should be answered by a most positive "No."

The United States Pharmacopœia is recognized as authority, and, in fact, is the only official authority which determines the nature, strength, and purity of drugs and medicines. The Pharmacopœia is supposed to be in the hands of every physician and of every pharmacist, though each profession derives from it knowledge which it utilizes in somewhat different directions.

The physician needs the Pharmacopœia in order to be familiar with the constituents of the various preparations and with the amount of active principles contained in them, so as to prescribe them properly. The physician takes it for granted that any of his prescriptions, as long as they contain no other but medicinal agents mentioned in the Pharmacopœia, will be filled by the pharmacist with exactly that article, or those articles, as mentioned and described in the official guide-book. In other words, the physician throws the whole responsibility for the quality of the medicines upon the pharmacist. This explains why the latter has to make another and even more extended use of the Pharmacopœia, by following closely the various methods laid down for making the different preparations or for determining their nature and purity.

How is it possible for a pharmacist to be responsible for the quality of his drugs and medicines, otherwise than by either preparing them, or by examining them himself? I may be answered that many manufacturers are but too willing to relieve the pharmacist of this responsibility, and to furnish him the preparations with a guarantee for strength and purity.

But is the pharmacist justified in permitting this responsibility to be taken off his hands? What has the physician to say to this; how will the public at large look upon such a change; and finally, what view will the State laws take in this matter? These are the questions which have to be considered before the query under consideration can be properly answered.

There is no doubt that the druggist has been, and is to-day, looked upon by the physician, the public, and the law, as the party responsible for the quality of the official drugs and preparations which he dispenses. As soon as he throws this responsibility upon somebody else, he no longer deserves the name pharmacist. He becomes the vender of articles of which he need not know much, if anything. He might yet require some little knowledge of the "art" of pharmacy, but the "science" of pharmacy would become unnecessary for the mere vender of medicines.

Even more seriously affected would be the position which the pharmacist occupies in his relation to the physician and the public. One of the most characteristic and distinguishing features between pharmacists and tradesmen is this: The value of articles sold by the tradesman can be judged in most cases by the buyer just as well as by the seller. In medicines this is generally an impossibility, not only for the public at large, but even for the physician. They both depend not only upon the absolute integrity of the pharmacist, but also upon his personal knowledge regarding the nature of the goods he sells.

The pharmacist consequently holds a trust, and it should be a sacred one to him, because his fellow beings entrust into his hands their most valuable possessions: health and life. And surely the pharmacist cannot afford to neglect any of his duties and responsibilities which have a bearing upon his trust.

The law also recognizes this fact, and would never allow the druggist to throw this responsibility upon somebody else, *i.e.*, upon a wholesale house or a manufacturer. If it should be demonstrated in court that the health of a person had suffered in consequence of a medicine not having been of the kind and quality prescribed by the U. S. P., no judge or jury would permit the dispensing druggist to escape punishment for the reason that he claimed ignorance as to the quality of the article sold.

In order that I may not be misunderstood, I will state that I freely admit that many manufacturers of chemicals or pharmaceutical preparations have not only better means for manufacturing them, but may be more skilled in testing and examining them, than many pharmacists. But these manufacturers themselves will no doubt agree with me when I say that the responsibility for the quality of the preparations should not be taken from the pharmacist. The reason is obvious, because, as soon as this were done, there would spring up a number of unscrupulous dealers and manufacturers selling, or trying to sell, to the druggist articles of inferior quality, or even worthless imitations. Consequently, even our honest manufacturers have to admit that the existence of well educated, responsible pharmacists is a necessity, as the uneducated, irresponsible druggist soon would sell inferior articles and imitations.

These are the reasons why the educated, skillful, competent pharmacist is a necessity. Even if he does not manufacture as many preparations now-a-days as he did formerly, he surely should be fully competent to test critically those which he buys. He either must do this, or he will misuse the confidence placed in him by the physician and the public, and will violate the State laws which compel him to dispense medicines of the standard recognized by the Pharmacopœia.

Having thus demonstrated that and why the pharmacist should be able and competent to apply the tests and assays of the U. S. P., it follows that the candidate for graduation in pharmacy must be expected to be familiar with this work. The diploma of Graduate in Pharmacy is a document certifying that the owner of it is a competent pharmacist, and he does not deserve that title unless he can use the U. S. P. fully and intelligently in all its bearings. This of course includes the knowledge of applying the tests and assays mentioned in the Pharmacopœia.

While the query does not *directly* imply an expression regarding the *feasibility* of the candidate acquiring the knowledge under consideration, I take the liberty of adding a few words in this direction.

My long experience as teacher and instructor of classes in the laboratory has taught me that there is a perfect willingness, and even an eagerness, on the part of the great majority of students to learn all that can possibly be learned in the courses of instruction given. In other words, whenever new opportunities are offered to the student to acquire knowledge which is useful in his calling and necessary for graduation, he gladly avails himself of these opportunities. Repeatedly the standard for graduation has been raised in the pharmaceutical colleges, and the same has to be done, and will be done, in the future whenever necessity arises.

Each succeeding Pharmacopœia introduces more exact, more elaborate, more rigid methods for the examination of most chemicals. These methods require greater skill and better knowledge, and the colleges are justly expected to educate and train their students so as to satisfy the demand for this more exact work.

Baltimore, July, 1893.

ARE PHARMACY LAWS A BENEFIT TO PHARMACISTS

BY JOHN H. MANNING.

I think so.

From the dawn of history to the invention of firearms, brute force ruled the world; but this discovery crystallized civilization, and from the protection to home and family came the slow process of working out those laws which best protected the public.

With the strange and fanatical belief that we ought not to profit by the experience of Europe, but little or no attention has been paid to the results accomplished by their stringent laws.

Those who expected to relieve the business ills of pharmacy by legislative enactment, were like Hudibras' double-barreled gun that,

> "Aimed at duck or plover,
> Recoiled and kicked its owner over."

The statutes could not hit those who would succeed under any circumstances—whose technical knowledge, tact, and financial ability were such that success would come in any field—but those who claimed that the burdens of business were greater in our ranks than in any other business. Their disappointment has been so great that we can easily learn who has been "kicked over."

Another class—those who want to be let alone, who are opposed to any and all laws, who say "no laws are necessary to insure a proper conduct of their business"—from them comes the bitter howl. They fail to see the signs of the times.

Pharmacy laws have been enacted:

1st. Because the public demand skilled men in positions of responsibility. This is proved by the laws relative to pilots and ship captains, and the power of boards of health, inspectors of meat, etc., all of which reach one end—the protection of the public.

2d. Because it is the quickest relief for the present without injury. We are in a transitory stage. The time is not far distant when the public will say, "No one but graduates can practice pharmacy;" and when we recall the present condition—training schools for all kinds of trades, cooking schools, trained nurses, technical schools—fitting students for the various industrial fields, we have abundant proof that the public are in it, and the tide cannot be stopped.

We can see the benefit of stringent laws in Germany—that wonderful country, the heart of music, the home of science. What immense industries have been developed in that country from the discoveries of examined pharmacists, the result of study under compulsion.

3d. The pharmacist will be benefited by the gradual growth of a profession out of a trade. By being compelled to fit himself in some lines, he will pay greater attention to all the details.

Pharmacy laws tend to raise the business to a proper plane, and weed out from the ranks of pharmacists unworthy members.

Lastly, because it is right. For this reason the laws ought to be most earnestly enforced. We shall better hold the confidence and trust of the public, if we say nothing of legislative restriction, but give it our hearty support.

You will recall Lincoln's remark, now an adage: "You may fool some of the people all the time, and all the people some of the time, but you cannot fool all the people all of the time."

Pittsfield, Mass., July 1, 1893.

CHEMISTRY.

MANUFACTURE OF ACETAMIDE.

BY SHELDON COLEMAN.

When engaged in the preparation of an article we find it both interesting and highly instructive to acquaint ourselves with such literature as may exist concerning the discovery of the article and the various methods of manufacture by which it has since been prepared.

Acetamide was discovered by Dumas Malaguti and Leblanc in 1847. They were engaged in investigating the action of phosphorus anhydride on ammonium compounds. A full account of their work is given in *Comp. Rend.* of that date under the title of "Researches on the Dehydration of Ammonium Salts and Amines" (Ref. 1).

As the preparation of acetamide was not one of the main objects of their work, it being prepared only that they might make further investigation concerning the action of phosphorus anhydride upon it, the account says little concerning the method of preparation. It tells us that the acetamide was formed by the action of aqueous ammonia upon acetic ether, by which sufficient quantities for their purpose were obtained, but it is silent concerning the means used in bringing about this action, and also of obtaining the acetamide from the resulting solution. The reaction is shown by the equation, $C_2H_3OOC_2H_5+NH_3=C_2H_3ONH_2+C_2H_5OH$.

It is quite probable that they did not obtain a very pure product, as they gave the melting-point as 78°, which is four degrees below the melting-point of pure acetamide.

The next account of the manufacture of acetamide which we find is given in *Ann. Ch. Phar.* (Ref. 2), in an article by Kündig entitled "The Action of Phosphorus Chloride on a Few Amines."

He prepared the acetamide from acetic ether and aqueous ammonia by allowing them to stand in a closed vessel for several months and then vaporizing and distilling the residue.

A modification of this process was published by Hofmann and Buckton in 1856 (Ref. 4), in which the acetamide was formed by heating acetic ether and aqueous ammonia at 120° for two or three hours in an iron cylinder. The transposition was then complete at the end of six hours' digestion.

In 1875 Smit published a method of manufacturing acetamide by which it was made from ammonium acetate by heating. The ammonium acetate was formed by neutralizing glacial acetic acid with ammonium carbonate on a water bath (Ref. 3).

In 1882 Hofmann (Ref. 5) formed acetamide from ammonium acetate which he had obtained by passing ammonia gas into glacial acetic acid and neutralizing with stronger ammonia water. This gave 85.7 per cent. of the theoretical yield, while an equivalent amount of sodium acetate and ammonium chloride gave only 77 per cent.

Up to this time an odor resembling that of the excrement of mice had been given as an attribute of pure acetamide in the descriptions of its physical properties. But in 1889 L. Meyer, in an article in *Ber. d. Chem. Ges.* (Ref. 6), refuted this. He had found that acetamide when recrystallized from ether lost this odor, its other properties remaining unchanged, excepting that the crystals were more fully developed.

The latest article on this subject is by S. Levy. (Ref. 7.)

He prepared acetamide from ammonium acetate obtained by neutralizing glacial acetic acid, heated on a water-bath, with ammonium carbonate.

He then commenced distillation at once. Some acetamide came over at 160°, but only that portion of the distillate coming over above 180° was retained. About 30 per cent. of the theoretical yield was obtained by this method. He purified the product by recrystallizing from ether or benzene.

A list of the references quoted above, with others, is found at the close of this work.

In the present instance acetamide was prepared in a manner differing somewhat from any of the preceding methods.

Dry ammonia gas was passed into warmed glacial acetic acid, and the neutralization completed by adding stronger ammonia water.

The ammonium acetate prepared in this manner was then heated for five or six hours at 250°, the flask containing the ammonium acetate being connected with a large reverse condenser.

A part of the ammonium acetate was thus changed into acetamide and water according to the equation $NH_4C_2H_3O_2=C_2H_3O_2NH_2+H_2O$.

The flask then contained acetamide and a solution of ammonium acetate.

Distillation was commenced, and that portion coming over above 180° retained separately. It entirely solidified upon cooling. The remainder of the distillate was then resubjected to the same treatment, and that portion coming over above 180° collected and added to the product retained before. This entire product was then redistilled to insure purity, and that portion coming over above 180° retained. This was dried over sulphuric acid.

The yield when prepared in this manner is from 75 to 80 per cent. of the theoretical yield.

The product is a white crystalline solid, quite deliquescent, and soluble in alcohol and water. It melts at 82° C.

A portion of the product dissolved in benzene, in which it is but slightly soluble, recrystallizes in long needle-like crystals which are without odor.

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CONTRIBUTION TO THE LITERATURE OF STRYCHNIN DETERMINATIONS.*

BY J. B. NAGELVOORT.†

I.

Supposing that everyone rightfully interested in the progress of pharmaceutical chemistry is familiar with the important controversy laid before the American Pharmaceutical Association, in 1892, between two respectable chemists (Mr. Snow and Mr. Gerock) on the subject of "Separation and Estimation of Strychnin and Brucin," the writer offers his experience in the case. He hesitated some time before deciding to offer these notes for publication. Some one might see his predecessor in this investigation in a light in which he does not wish to place him. It is, however, selfish, illiberal and unscientific to withhold the good results obtained by (a modification of) Gerock's process.

I hope that the information will be received in the same spirit in which it is given.

It will be well to commence this contribution where Mr. Snow left off, and quote verbatim from his paper, presented to the late A. P. A. meeting, in 1892, concluding:

"Altogether, this subject [of separation and estimation of strychnin and brucin] is a most discouraging one, and though I have performed many experiments, have as yet nothing but negative results to offer."

It sounds like a pleonasm, but is nevertheless true, that Gerock's separation of strychnin and brucin, as found in the *Arch. d. Pharm.*, 68, year 1889, page 158, gives good results *if* modified in some details and elaborated in others. Disastrous results are the consequence of a literal application of the process as given in the *Arch. d. Pharm.*, 1889, p. 160. I fully agree with Mr. Snow in this, but it seems that my colleague did not go far enough with his experiments. Modified, as it was found to be the best to do, it is as good a process as others.

It is a step in the right direction (Gerock's process), just as Dunstan and Short's‡ and Beckurts'§ processes were, notwithstanding that others are not equally successful as the authors in estimating strychnin by the ferrocyanate methods.

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* From the Analytical Laboratory of Parke, Davis & Co., Detroit.

† Read before the forty-first annual meeting of the American Pharmaceutical Association.

‡ *Pharmaceutical Journal and Transactions* for Oct. 13, 1883.

§ *Arch. d. Pharm.*, 1890, p. 338.

The methods suggested in the pharmaceutical press by different writers [titration of the total alkaloids in Semina Strychni] (*Pharmaceutical Record*, Caspari, Nov, 1892; *Apoth. Zeitung*, Partheil, Aug. 27, 1892; Lloyd, A. P. A. papers, 1892; *Helfenberger Annal.*, 1891, 46), are arbitrary and irrelevant to the question at issue—strychnin estimation, where the ratio of activity of strychnin to brucin is as 1 :—38 (*Archiv der Pharm.*, 1890, p. 347). Perhaps the process of Gerock may save Semina Strychni and preparations thereof *for a little while yet* from their ultimate fate, to follow "Semina" Santonici, Cortex Peruvianus, Folia Sennæ, etc., *to the garret.* The following figures will prove one of the principal statements made by this paper, *i.e.*, that the chief features of Gerock's process are good:

Taken.	Found.
0.032 Strychnin	0.032 Strychnin.
0.023 "	0.0225 "
0.021 Brucin	Nothing.
0.032 "	"
0.028 Strychnin	0.026 Strychnin.
0.016 Brucin	Nothing.
0.034 Strychnin	0.0332 Strychnin.
0.048 Brucin	Nothing.
	Strychnin.
0.254 total alkaloid from sol. ex. nux vom.	0.0975=38.4 per cent.
0.203 " " " same "	0.088 =43 per cent.
0.159 " " " fl. ex. "	0.0646=46 per cent.

It has to be proved here that the consequences of a literal following of Gerock's process for the separation of strychnin, as described in the *Arch. d. Pharm.*, 1889, page 158, are disastrous.

1. Gerock says: Collect the picrates (of the total alkaloids) on a filter, and wash until the wash-water is colorless.

Writer found this to be an impossibility. I have continued the washing of a precipitate for three days, of ten hours, with cold hydrant-water (12°, winter time), and my filtrate was still of a yellow color on the third day. I have evaporated some of the wash-water, and obtained strong strychnin reaction with H_2SO_4 and $K_2Cr_2O_7$, and brucin reaction with HNO_3, in the residues.

2. It is not an easy task to entirely remove the picrates of the total alkaloids from filter paper—after they had been dried at 105° C., as Gerock prescribes, before they are submitted to the destructive action of HNO_3 of 1.056 sp. gr., and to preserve the filtrum for further use; the fine precipitate has usually to be scraped off (brushing off does not succeed very well), and filter-paper dried at 105° is very brittle, breaking easily.

3. As Mr. Snow observes rightly, there are no prescriptions given by Gerock about the quantity of HNO_3, in relation to a certain amount of total alkaloid, neither about the time and temperature of the exposure of the picrates of the total alkaloids to the destructive action of the dilute acid. One has to find out these details, at an enormous expense of time, labor and materials, before one can use the process.

4. The factor to calculate strychnin from the undestroyed strychnin picrate at 105° C. is not given by Gerock. But this is an oversight, no objection to the method.

II.

Details for the determination of strychnin in preparations of Semina Strychni:

Take the tare of a small flask, holding about 50 c.c., of a good bulb form; weigh in it a small quantity not far exceeding 1 gramme of solid extract or powdered extract, nor 5 grammes of fluid extract. This ***modus operandi*** is to be preferred over an exact weighing of 1 gramme, the elastic nature of solid extract Semin. Strychni making it very bothersome to weigh it. When the accurate quantity (1.2 g., or 1.1 g., or 1.05 g., in case of a solid or powdered extract) is decided upon, add 5 c.c. of 10-per-cent. H_2SO_4 to the contents of the flask, pay no attention to it if some of the solid extract stick to the neck, cover it—do not cork it—with a small beaker, and warm the whole on a sand-bath. Hereby is obtained, without any difficulty, and in as little time as possible, a homogeneous mixture of the solid extract and the acid, without loss of material and without any attention being required. From a fluid extract the alcohol is to be evaporated off first, and the residue afterwards treated as prescribed for solid extract. Wash the acid mixture, when cold, three times, with alcohol-free ether; reject ether. Make alkaline with ammonia; use strong ammonia in order to keep a small quantity fluid. Exhaust with ether; this gives purer alkaloid than a mixture of ether and $CHCl_3$ does; collect, according to analytical rules, the solution of the alkaloid in a tared beaker, ***not*** in an evaporating-dish (reasons for this to follow) of 50 c.c. capacity.

Evaporate small quantities of ether (10–15 c.c) at the time, to prevent it from creeping over the edges; dry residue to constant weight (let us say this was found to be 0.168).

Dissolve the thus obtained total alkaloids (these details also apply to an assay of 5 g. Semina Strychni) in 5 c.c. $\frac{N}{10}$ H_2SO_4 (as a minimum) and 1 to 2 c.c. more as the occasion requires, by slightly warming. When the analysis of the Semina Strychni (or of one of the preparations thereof) has been carried out correctly, the solution of the total alkaloid will be clear, but colored. Cool. Dull the excess of acid off with $\frac{N}{10}$ NaOH, from a burette or pipette, and, when nearly neutral, add an excess of a saturated solution of "picric acid."[*] Fill beaker with ice-water, and keep it in a cool place (window-sill of working-room in winter time) until the precipitate is clearly settled. Slowly rotating or stirring with a glass rod facilitates this.* Verify with an additional drop of "picric acid" solution, if there is an excess of "picric acid;" if not, more has to be added. Decant as close as possible with an appropriate syphon, and wash four times. Dry the picrates in the beaker used.

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[*] This proceeding of neutralizing is preferable because it allows the operator to add the smallest quantity of acid and NaOH needed, without difficulty. Use Cochineal tincture as indicator.

Add 25 c.c. nitric acid of 1.056 sp. gr., warm the picrates (of which we may consider 0.150 g. an average quantity under operation) with it for half an hour to 60°, stirring with a glass rod every fifteen minutes; cool. Neutralize carefully with ammonia water; the color of the fluid will become darker when the neutralization point is reached. Acidulate again immediately with acetic acid; use a glass rod, moistened with hydrochloric acid, to control the neutralization of the excess of nitric acid with ammonia; a piece of litmus paper cannot be used in the highly colored fluid. Let the undecomposed strychnin picrate settle down; wash by decantation, as before, four times, with cold water, dry to constant weight in the beaker, weigh and calculate to strychnin, and to percentage; *e.g.:*

$$\frac{\text{Strychnin picrate} \times 59.32}{100} = \text{Strychnin.}$$

Detroit, May, 1893.

CONCLUDING REMARKS.

After these notes had been written and were laid aside for a while, to offer them at the proper time to your Association, the writer repeated again the whole process of Gerock, as modified in the pages above.

I entered under date of June 30, 1893, in my notebook, the following facts:

Standard fl. ext. nuc. vomicæ, 10 g. (taken),
Yielded 0.153 total alkaloid, dried to constant weight at 105°;
Yield of total picrates (105°), 0.226 g.;
Yield of strychnin picrate (105°), 0.106 g.,
× 0.5932=strychnin, 0.0628 g.

$$\frac{0.0628 \times 100}{0.153} = 41 \text{ per cent. strychnin in total alkaloids obtained.}$$

July 20, 1893, page 166.

Sol. Ex. Nuc. Vom., 1.481 g., yielded 0.254 total alkaloid (105°).
Yield of Strychnin picrate, 0.167×0.5932=Strychnin 0.9906 =40 per cent. of total alkaloid obtained.

T. E. Gerock, "Trennung des Strychnins vom Brucin," *Arch. d. Pharm.*, 1889, p. 158: Die Alkaloide werden unter kurzem Erwärmen auf dem Dampfbade aus möglichst neutraler Lösung mit Pikrinsäure ausgefällt. (Besonders das Brucinpikrat, welches in der Kälte sich sehr langsam absetzt wird dadurch flockiger und das Filtriren ist nachher erleichtert.) Nach einiger Ruhe werden die Pikrate auf einem tarirten Filter gesammelt, mit kaltem Wasser ausgewaschen, bis letzteres farblos abläuft, bei 105° C. getrocknet und gewogen. Man klopft nun den Niederschlag so gut als möglich vom Filter in ein Becherglas und giest Salpetersäure von 1,056 spez. Gewicht, die auf dem Dampfbade erwärmt wurde, zu wiederholten Malen durch das Filter, um das anhängende Brucinpikrat zu zerstören. Diese Salpetersäure wird nun zur Hauptportion des Niederschlages gebracht und damit einige Zeit auf dem Dampfbade erwärmt. Alsdann wird genau neutralisiert, mit einer Spur Essigsäure versetzt (Strychninpikrat ist sowohl in Salpetersäure als in Alkalien löslich, in Essigsäure hingegen bei solcher Verdünnung nicht merklich); nach dem vollständigen Erkalten wird das zurückbleibende pikrinsaure Strychnin auf das schon angewandte Filter gebracht, wie oben gesagt, gewaschen, getrocknet und gewogen. Das Brucin berechnet sich aus der Differenz beider Gewichte.

SOME PRACTICAL OBSERVATIONS.

BY AN OLD PHILOSOPHER.

Many people believe that a corner drug-store is an inexhaustible mine of wealth, and in consequence young men frequently enter the drug business as proprietors of such a store filled with great expectations, which are not always realized.

The great fault with most young men of to-day is their desire to get rich too fást; they are not content to plod along as their fathers did before them and gradually and carefully accumulate a fortune, but they must find it now and all at once. When they go into an enterprise, they want capital, and lots of it; they want to begin at the top of the ladder on a big scale and electrify the world; they expect to double their money in a night, and double it again next day, and so lead a fictitious existence. When they are successful, it takes considerable time and experience for them to learn that it requires as much brains to keep money as it does to get it.

⁂

We probably meet more cranks in the drug business than in any other line. There are crank customers who have their own peculiar notions, and it will do no good to openly oppose them. If you treat them politely, they will probably come again. If you are impatient with them and give them to understand that you do not care for their trade, they are apt to go elsewhere and say unpleasant things about you.

A cranky clerk can do great damage in the drug trade. He is likely to offend customers by lack of attention or politeness; will slam things around, and quarrel with his associates.

A cranky proprietor is worst of all; he thinks no one's way of doing things is as good as his own; scolds his clerks for doing the very things he does himself, and worries himself into dyspepsia and possibly into bankruptcy.

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* This settling requires a little patience, but one is amply repaid by the results. At first the picrates of S. and Br. settle down slowly. But, after one washing, when the Sodium Sulf. solution is removed, the process works smoothly.

Winchester Pint.

W. H. H.—A Winchester pint is equal to ½-gallon imperial, or about five pints wine measure.

Cincholine.

J. E. D.—According to O. Hesse, cincholine is a volatile base met with in the preparation of cinchona alkaloids. Its formula is given as $C_{10}H_{21}N_4$.

It is a highly refractive oil, boiling at 236°–238°. It is homologous with coniine, but appears not to be poisonous.

Alcoholic Percentage of Distilled Extract of Witch Hazel.

B. W. C., Ohio.—The majority of distilled extracts of witch hazel on the market contain 12 per cent. alcohol, and not 15 as claimed by many manufacturers.

Alcohol being added simply as a preservative, 15 per cent. is unnecessary, as 12 per cent. will effectually answer the purpose.

Three per cent. of alcohol is usually added as soon as the extract is distilled, and 9 per cent. in about one month.

Process for Preserving Eggs.

Wayne.—Eggs treated to the following process, which is patented in England, are said to remain absolutely unchanged for a year or more: The fresh eggs are first washed in milk of lime in order to remove any dirt or grease from the surface and to "destroy the ferments which exist in the pores of the shells." The eggs thus cleaned and purified are then coated with a thin layer of gelatin. The gelatin should be free from odor and colorless.

The shells of eggs treated to this process are said to be made stronger, a great advantage in transportation.

Fatty Acids.

B. M. C., Washington.—The term fatty acids is applied to a homologous series of organic acids on account of the fact that several of them are essential constituents of animal and vegetable fats.

The group has the general formula CnH_2nO_2.

The lowest term of the series is formic acid, H.COOH; the highest at present known is theobromic acid, $C_{63}H_{127}$.COOH.

Although many of the fatty acids are well known, the larger part of them are merely curiosities.

The lowest members of the series, as formic acid, acetic acid, etc., are mobile liquids, miscible with water, alcohol, and ether. As the number of carbon atoms increases, the acids become less soluble in water, more oily and viscid, and less volatile.

For a more detailed account of this group we refer you to Watt's Dictionary of Chemistry, or Thorp's Dictionary of Applied Chemistry.

Weather Glass, or Chemical Barometer.

A. E. W.—The solution for the weather glass is made as follows:

(1)	Camphor	2½ drachms.
	Alcohol	11 drachms.

Dissolve the camphor in the alcohol.

(2)	Water	9 drachms.
	Potassium nitrate	38 grains.
	Ammonium chloride	38 grains.

Dissolve the salts in the water. Mix the solution of the salts with the camphor solution, and shake well together. Place the solution in a large phial or test tube; cork tightly and paraffin the top, afterwards passing a red-hot needle through the cork in order to make a small aperture to admit the air.

The barometer may then be hung up in any convenient place, and will serve as an excellent indicator of approaching changes in the weather.

Ultramarine.

A. M. W., Chicago.—The composition of lapis-lazuli, or ultramarine, is given by Dana as follows:

	Per cent.
Silica	45.5
Alumina	31.8
Soda	9.1
Lime	3.5
Iron	0.8
Sulphuric acid	5.9
Sulphur	0.9
Chlorine	0.4
Water	0 1

The mineral is of a rich Berlin or azure blue color, and rarely occurs in crystals. The color is supposed to be due to sodium sulphide.

The richly colored ultramarine is highly esteemed for costly vases, for inlaid work, and is used also in the manufacture of mosaics.

As a pigment, artificial ultramarine is mainly used, owing to its cheapness.

An ultramarine of brilliant hue is said to be made by the following process:

	Parts.
Kaolin	100 to 110
Soda	90 to 95
Sulphur	110 to 120
Resin	10 to 15
Carbon	10

The ingredients are pulverized separately and made into a fine powder. All are mixed thoroughly and passed twice through the grinding mill, and then placed in appropriate crucibles, which are then closed and luted with a silicate cement. The crucibles are placed upside down in the furnace and heated, at first slowly, so as to come to a dull red heat in five or six hours. They are maintained at this temperature from thirteen to twenty hours, and then allowed to cool.

Confectio Damocratis.

H. E. S.—This is an example of the polypharmacy practiced by the physician of previous generations, and which, happily, has now fallen into "innocuous desuetude." Confectio damocratis is a formidable preparation containing forty-five ingredients (London Ph., 1749), many of which, such as "bellies of scinks," etc., we think, would be hard to obtain at the present day.

It formerly was one of the ingredients of Warburg's Tincture, but no longer enters into the composition of that preparation.

The formula, taken from Oldberg's Unofficial Pharmacopœia (1881), is as follows:

		Grammes.
℞	Cinnamon	14.00
	Myrrh	11.00
	Agaric	10.00
	Spikenard	10.00
	Ginger	10.00
	Spanish saffron	10.00
	Treacle mustard-seeds, or in its stead Mithridate mustard	10.00
	Frankincense	10.00
	Chian turpentine	10.00
	Camel's hay	8.00
	Costus Arabicus, or in its stead zedoary	8.00
	Indian leaf, or in its stead mace	8.00
	French lavender	8.00
	Long pepper	8.00
	Seeds of hartwort	8.00
	Juice of the rape of Cistus	8.00
	Strained storax	8.00
	Opopanax	8.00
	Strained galbanum	8.00
	Balsam Gilead, or in its stead expressed oil of nutmegs	8.00
	Russia castor	8.00
	Poley-mountain	7.00
	Water-germander	7.00
	Fruit of the balsam tree, or in its stead cubeb	7.00
	White pepper	7.00
	Seeds of the carot of Crete	7.00
	Strained bdellium	7.00
	Celtic nard	5.00
	Gentian root	5.00
	Leaves of the dittany of Crete	5.00
	Red roses	5.00
	Seeds of Macedonian parsley	5.00
	Seeds of lesser cardamoms	5.00
	Seeds of sweet fennel	5.00
	Gum arabic	5.00
	Strained opium	5.00
	Root of sweet flag	3.00
	Root of wild valerian	3.00
	Anise seed	3.00
	Strained sagapenum	3.00
	Spignel	2.50
	St. John's wort	2.50
	Juice of acacia, or in its stead catechu	2.50
	The bellies of scinks	2.50
	Clarified honey	915.00

Dissolve the opium first in a little wine, and then mix it with the honey made hot; in the mean time melt together in another vessel the galbanum, storax, and other ingredients of this kind, continually stirring them that they may not burn; when these are melted add the honey gradually. Finally, when the mixture is nearly cold, add the rest of the ingredients reduced to a powder.

LONDON LETTER.

London Ice—The British Pharmaceutical Conference.

Ice finds increasing employment in this country for the cooling and preservation of articles of food, and for mixing with a great number of beverages, in which it is melted and actually consumed. This alone renders it desirable that ice should be subjected to the same control and supervision as is exercised over ordinary articles of food in the interests of public health, especially as ice has been suspected and in some cases proved to be the carrier of contagious diseases. The medical man has, too, a very direct interest in the matter of its purity, as he frequently prescribes ice to cool the beverage or draught of the invalid, and sucking of ice is often recommended in certain ailments.

The appointment of a special commission by the *Lancet* to enquire into the character and quality of the ice-supply of London during the recent hot summer months, therefore appeared very opportune, and the report of the commission has been received with a considerable amount of public interest and, on the whole, of congratulation.

Despite the development of the new industry of artificial ice-making created by the increased demand for ice in certain manufacturing processes, the ice procurable in London from restaurants and similar sources appears mostly to consist of natural ice imported from Norway, so that only one out of the six samples examined was an artificial ice. The results of chemical examination were all in favor of the natural ice, which as regards its organic impurity might almost have been derived from a distilled water, whilst the notable amount of free ammonia and of albuminoid ammonia present in the artificial product brought it to the limits of the recognized standard of potable waters. Probably the water employed for its production had been obtained from a London artesian well, which, although yielding a water of good quality at very great depths, is always characterized by a large amount of free ammonia.

Although chemical examination may furnish evidence of impurity sufficient to condemn the water in question, alone it is powerless to decide whether the water may be drunk with absolute safety. Bacteriological examination pronounced a condemnatory verdict upon two of the natural Norwegian ices, whilst the artificial ice was shown to be the most free from bacterial contamination. This opinion, it may be said, was based upon the quantity of organisms in the water, which in the two above cases were estimated at between 400 and 700 per c.c., but whether of dangerous character or not was not ascertained.

In the light of the above evidence the commission considers that when ice is intended for human consumption preference should be given to that produced by artificial means. This of course presupposes that the water employed is satisfactory, but it is doubtful whether the further recommendation that only distilled water shall be used for this purpose will find much sympathy with the manufacturers.

The interest of pharmacists here during the past few weeks has been centred around the proceedings of the British Pharmaceutical Conference, which met at Nottingham under the presidency of the genial Mr. Octavius Corder. Beyond a brief discussion of the respective merits of long and short terms of apprenticeship, the inaugural address dealt mainly with the common herbaceous plants connected with medicine, the hobby of the president. Curiously enough, botanical subjects have been little regarded by the chair since the Conference last met in Nottingham in 1866 under the presidency of Professor Bentley.

One is always fearful that a speaker once on his hobby will ride it to death, but the close communion in which Mr. Corder brought his hearers with John Gerard and his famous "Herbal" written in 1596 will always be remembered with relish. It is said that the plates were all of German origin, and that even the text of this antiquarian treasure was cribbed, but it is evident that to Gerard must be accorded a prominent position amongst those who cultivated herbaceous plants.

Proceeding in the order adopted by Gerard, which, though little in accord with modern classification, was more adapted to the botanical knowledge of the Middle Ages, Mr. Corder discussed the botanical features of the old-time remedies and their real or reputed medicinal qualities. The hellebores and aconites, with their differently active species, and the allied actæa and delphinium, the poppies and anemones, the gentians and rueworts, the crocus and snowdrop, iris and daffodil, all contributed to an edifying and interesting address.

As usual, there was a motley collection of papers both as regards subjects and quality. The number was much smaller than usual, though there was a good attendance, and comparatively few of the papers presented features of general interest. Mr. W. Elborne led the way with a preliminary report on Coto Bark, an investigation that he has taken up with the assistance of the Conference in the hope of running down its mysterious and puzzling botanical origin. At present Mr. Elborne has not been more successful than previous investigators, though he has ascertained a few fresh facts. Curiously enough, two distinct lines of inquiry, the comparison of local names and investigation of the chemical constituents, led him to the same conclusion—that coto bark is yielded by a species of Drimys—but this view he rejected because the structure of Winter's bark (*D. Winteri*) is so essentially different from that of genuine coto bark. The cotoin of Winter's bark agreed in melting-point and qualitative reactions with the published reactions for cotoin from true Bolivian coto bark, but quantitative analysis detected an apparent difference. As there is a prevailing opinion that coto is yielded by a lauraceous plant, the author drew attention to the large tree (*Laurus gigantea*) recently described by Dr. Bayon as growing in the neighborhood of the coto region, but concerning which at present very little is known.

An interlude succeeded the discussion on this paper, during which Professor Clowes briefly sketched out the scheme of pharmaceutical education adopted in Nottingham University to an appreciative audience. Two papers were then taken on belladonna preparations—the one on Collodium Belladonnæ by Mr. R. Wright, the other on Liquid-Belladonna Plaster by Mr. W. A. H. Naylor, the active secretary of the Conference. Both these papers arose from the unsatisfactory nature of the preparations in the Unofficial Formulary, and the results of the experiments carried out by these two independent investigators with a view to improvements approximated to a gratifying degree. Both gave the preference to the leaves over roots for the preparation of the fluid extract, and finally obtained preparations with 0.25 per cent. alkaloidal strength, though by different methods. Mr. Wright recommends a 2-in-1 fluid extract with rectified spirit by re-percolation, leaves half the alkaloid in the leaves, and mixes the extract with an equal volume of ether. Mr. Naylor also makes a 2-in-1 fluid extract, and by exhausting the drug and evaporating the later percolates obtains an extract of twice the strength, from which the ether throws out half the alkaloid again. The former plan seems the more simple.

Of course everyone could speak on belladonna preparations, and German leaves were the subject of several rough remarks. The President's suggestion to employ a definite solution of atropine did not meet with any support; galenical preparations were in high favor with the meeting, such as fluid extracts in which the alkaloids were in their natural state—united with their natural acids—*although the desirability of standardization was recognized.*

Messrs. Farr and Wright followed the last point up with one of their classical papers for which they have obtained a name during the past three years. Suggestions for the standardization of the alkaloidal tinctures of the British Pharmacopœia represented an enormous amount of detailed work. If a demand were made on the part of the medical profession for galenical preparations absolutely uniform in composition, "*Non possumus*" would undoubtedly be the cry of the pharmacist. Where scientific precision is required, the alkaloids or solutions of them will be employed. But if a physician prescribes a galenical preparation of a powerful drug, it may be assumed that he wishes to administer to his patient all the active principles of the drug in the state of combination in which they occur in the drug itself. Further it remains for the pharmacist to see that the preparation placed in the hands of the medical man is as nearly constant in strength as the art of pharmacy can make it.

How is standardization on the above lines to be carried out? is the question Farr and Wright have been trying to answer. Standardized drugs, in their experience, do not secure uniformity in strength of tinctures prepared from them. An alternative method, the pharmacopœial method for the preparation of nux vomica, consists in the production of a standard extract, and its utilization for the other galenical preparations of the drug. The authors oppose several objections to this plan. In the first place, the preparation of the extract involves exposure to heat of those constituents of the drug most susceptible to change. The resulting tincture is also much darker in color than a tincture of the same strength prepared by a cold process, and is apt to throw down an unsightly deposit when kept. Another objection to the preparation of tinctures from extracts is that very few extracts are stable for any length of time. From such considerations Farr and Wright have been led to the conclusion that the most feasible plan for the production of tinctures of standard strength consists in the preparation of a strong tincture by percolation, followed by its estimation and subsequent dilution to the required standard. By such a plan as this the employment of heat is avoided, the natural combinations of the drug are preserved, and the active principles remain distributed through such a volume of liquid as may be taken to ensure the stability and permanence of the resulting preparation.

Later on, the same indefatigable workers contributed a further note on the alkaloidal strength of hemlock fruit, intended to call the attention of pharmacists generally to the existing conditions of this drug rather than claiming any originality. They had observed that the conium fruit of commerce varied immensely in alkaloidal strength, from 0.096 to 1.304 per cent. of hydrochlorides of mixed alkaloids in eleven samples examined. Yet they found no difficulty in collecting fruit themselves which when carefully dried yielded 3.00 per cent. for immature and 3.36 per cent. for just matured fruit, and suggest that a standard of 2 per cent. alkaloidal hydrochlorides in the fruit and 0.25 per cent. in the tincture should be required.

The specific gravity of sandalwood oil has always been a variable figure and a subject of disagreement amongst authorities. Mr. M. Conroy finds that both the viscosity and specific gravity are increased by prolonged heating of the oil, which accounts for the high specific gravity of the Indian article, where a system of slow distillation is employed. He considers that 0.972 at 60° F. should be the minimum allowed for a well distilled oil, in view of the fact that all likely adulterants are of lower gravity.

According to an examination of beeswax by Parry and Estcourt, the product at present in the London market is adulterated to such an extent that the analytical results of the authors, although supported by confirmatory tests, were received with a decided show of incredulity. Only four of the twelve samples, both bleached and unbleached, were found pure, the adulterants being paraffin, stearic acid, and rosin in the eight remaining. In one of these paraffin was present to the extent of 75 per cent.

"The Ipecacuanhas of English Commerce" was the title of a paper read by Mr. E. M. Holmes, in which that careful observer, in view of the controversy that has lately gathered about ipecacuanha, had brought together in a concise form the characteristics of the true and false ipecacuanhas met with, furnishing a handy record of histological and chemical landmarks for reference. His paper was followed by another by Mr. Bird on De-emetinized Ipecacuanha. Surgeon-Major Harris, of Simla, first suggested the use of ipecacuanha, deprived of its emetine, as a remedy for dysentery, the great advantage he found being that it did not produce the nausea and extreme depression which follow such doses as 30 grains of the natural drug. The divided opinions expressed by medical men who have since tried the de-emetinized ipecacuanha are no doubt partly due to the drug employed having been only partially extracted. In six samples of so called de-emetinized ipecacuanha Kanthack and Caddy found emetine varying from traces to 1.2 per cent. Mr. Bird suggested that a satisfactory process consisted in exhausting the finely powdered root by percolating with ammoniated chloroform, washing out the emetine from the solution with dilute sulphuric acid, returning the washed chloroform to the powder, and, after mixing uniformly, drying the product.

A note by Mr. J. C. Umney on African Copaiba was the last paper that dealt with drugs. To the general characters which have already been described, he added some information regarding the essential oil distilled from it. This amounted to about 39 per cent., the greater part distilling between 260° and 265° C., possessing a heavier gravity and opposite rotatory power to the oils from the South American oleo-resin. The residue left on distillation also differed from the American product in being nearly completely unsaponified by alkalies.

Amongst analytical examinations Mr. Bowden showed that the lithium salts, the carbonate and citrate, occurring in commerce were practically pure, while Mr. Ough revealed grave discrepancies in the dosage of effervescent caffeine preparations. That these should exist in a preparation so easily controlled caused great surprise.

A new direction was given to discussion in pharmacy by a paper read by Mr. E. White on the Pharmacy of the Thyroid Gland. Premising that the thyroid gland had taken an assured position in materia medica, the author described the preparation of two forms of glycerin extract, a dilute alcoholic extract, the proteids precipitated by the addition of absolute alcohol to the glycerin extract, and the precipitate produced by the addition of lime-water to the glycerin extract after acidulation with phosphoric acid. Mr. White favors the last preparation, and is of opinion that the active principle of the gland, which is undoubtedly present in the dried precipitate, is of the nature of a ferment.

The place of meeting selected for 1894 is Oxford, where the Conference will meet under the presidency of Mr. N. H. Martin.

BERLIN LETTER.

The Mydriatic Action of Scopolamine—Duboisine as a Sedative—The Treatment of Epilepsy—Salacetol in Diarrhœa—Hydrastis Canadensis—Cornutin.

The alkaloid scopolamine, discovered by Schmidt of Marburg, in *Scopolia atropoides*, is evidently a valuable addition to the class of mydriatics. According to the investigations of Rählmann, published last February, the new alkaloid surpassed all the other tropeines, including atropine itself, in its antiphlogistic and mydriatic qualities. In the strength of its mydriatic action it equaled hyoscine, and was free from unpleasant by-effects and symptoms. Rählmann estimated it as five times as strong as atropine, the ⅕-per-cent. solution of scopolamine being equal to a 1-per-cent. atropine solution. In June, Bellarminow corroborated these statements in the main, although he pointed out that whilst scopolamine is far more energetic it has not the permanent action of atropine.

The action of scopolamine hydrobromide has now been further studied by Dr. Illig, and, though he does not write concerning it in such enthusiastic terms of praise, his report materially strengthens the position of this alkaloid in ophthalmic use. He finds that even in weak solutions scopolamine develops a much more rapid action than atropine, in strong solutions it even surpasses atropine in regard to degree of extension produced in the pupils; the period of its action is much shorter, and in real strength it is much inferior to atropine. Consequently in all cases where atropine is borne, scopolamine cannot be considered as equal to atropine in therapeutical action, and in no case can it be regarded as superior. Wherever an idiosyncrasy is exhibited, however, against atropine, scopolamine is an excellent substitute, as it does not produce any disturbances or unpleasant symptoms by continued use. Scopolamine is also a valuable mydriatic in all inflamed conditions of the eye, in which atropine is contra-indicated on account of its increasing vascular pressure. For purposes of diagnosis, moreover, cocaine still maintains its place, as, although the action of scopolamine is quicker than that of atropine, it is too prolonged to be serviceable here.

There is still a certain amount of uncertainty and mystery that hangs about the identity of some of the solanaceous alkaloids, especially since Schmidt showed that the hyoscine of commerce was not the body described as hyoscine by Ladenburg, but scopolamine. Thus the alkaloid from *Duboisia myoporoides* has been at different times decided to be identical with hyoscyamine, with hyoscine, and with scopolamine, but it still retains its identity under the name of duboisine, and is credited with peculiar therapeutical properties. Medical interest has again been attracted to duboisine sulphate since Ostermayer published his investigations on its sedative and hypnotic action.

Since then a number of papers have appeared by Belmondo and others that have confirmed Ostermayer's results, and especially have indicated duboisine sulphate as an excellent substitute for hyoscine in asylum practice. Dr. Rabow, having administered about four hundred doses to maniacal patients, is likewise of the opinion that duboisine is not only equal but preferable to hyoscine, and that it can be borne in larger doses than the latter. One-half to 1 milligramme is a sedative dose, 2 milligrammes is equal to 2 grammes chloral hydrate in hypnotic action. He does not recommend it, however, as a regular sleeping draught, for in the first place the sleep is not refreshing, and in the second the system speedily accustoms itself to it; but for quieting patients in maniacal fits it is extremely useful. In exceptional cases it may even be administered hypodermatically in 1-per-mille solution.

Curiously enough, whilst Dr. Rabow failed to notice any effect with duboisine in epilepsy and hysterical epilepsy, Professor Albertoni has employed it with success in three cases of hystero-epileptic attacks, and considers that duboisine will prove very serviceable in this direction. In each case the convulsions were relieved and prevented by subcutaneous injection of a ½-milligramme dose, and the patient slept quietly. Samuely and Belmondo also report similar cases.

Amongst new synthetical remedies, salacetol is worthy of mention, because it represents a distinct theoretical improvement upon a medicament the value of which has already been extensively recognized. Salol is a phenol ester of salicylic acid. Insoluble and without physiological effect in neutral and acid liquids, it is dissolved even by dilute alkalies and split up into its two components, so that it not only serves as a good disinfectant of the intestinal tract since it can develop its activity in the alkaline juices, but it is also a convenient form of administering the antirheumatic salicylic acid without danger of giving rise to digestive disturbances in passing through the stomach. Salol possesses the one drawback that the caustic carbolic acid is also liberated on its decomposition in the intestines; and to avoid any ill effects arising from this, in salacetol the carbolic acid is replaced by acetol or acetone alcohol, which is completely harmless. Salacetol is insoluble in water, unattacked by acids, and split up by dilute alkalies into salicylic acid and its second component in the same way as salol, and, moreover, 72 instead of 64 per cent. salicylic acid is set free. Professor Bourget has given it a clinical trial with successful results in cases of infectious diarrhœa. He recommends its administration in castor oil:

Salacetol..................	2 or 3 grammes.
Ol. ricin	30 grammes.
F. solut.	

This dose may be taken in the morning without hesitation, and if necessary may be repeated on two or three successive mornings. It is such a mild preparation that even a child of twelve months can take ½ gramme daily without ill effects. Bourget recommends salacetol in all cases where intestinal disinfection is desirable, in choleraic or summer diarrhœa, for the disinfection of the urinary tract, as well as in subacute or chronic gouty rheumatism.

The fluid extract of Hydrastis canadensis is being used with excellent results by Dr. Olszewski for controlling night-sweats. He has treated ninety-three cases, including different types of disease: inflammation of the lungs, pleural exudations, intermittent fever, polyarthritis rheumatica, and tuberculosis. Out of seventy-three cases of tuberculosis the remedy afforded certain relief in seventy cases. A single dose of 20 to 30 drops at night does not always suffice, but when given in 25- to 30-drop doses two or three times daily it nearly always overcame the night-sweats in the course of a few days. Only in two cases out of the whole ninety-three did the remedy cause nausea and could not be well borne.

Cornutin, which Kobert discovered to be the active principle of ergot of rye, seems to find more and more general employment in medicine. Thus from France comes a report of its successful administration in twenty-seven cases of spermatorrhœa. The dose was only 0.003 to 0.006 gramme daily, and in every case was effectual. This secale preparation also appears to be a good remedy for spermatorrhœa of a paralytic character.

NEW YORK LETTER.

Since my letter of last month a most marked improvement has taken place in the money market of this great centre. The depression that showed itself in the faces of all merchants has rapidly passed away, and a marked cheerfulness has taken its place. As there was no cause for the money troubles through which we have passed other than lack of confidence, this returning cheerfulness indicates that the condition of doubt is very fast passing away. This also has very plainly been seen in the sales during the past two weeks, which, while in volume not very large, in the variety of the demand indicate that throughout the country trade is again starting up.

It is confidently believed that by the first of October business will again become very nearly normal. It cannot be expected that money will be actually free for some time to come, but with the return of confidence and with exhausted stocks the demand must rapidly improve. There is no speculation, all being content to buy for absolute necessities. In the hands of importers of foreign drugs, stocks are not large; and should there come, as is to be hoped, and is believed by most, a sudden active demand with the opening of October, very greatly enhanced prices must follow. That our market had about reached bottom before the money stringency reached us, is made clear from the fact that despite extreme dullness of trade, but few declines in prices were marked. This is only for the reason that there was no longer any room to reduce prices and realize any profits whatever.

Opium remains dull. Reports continue to arrive of large and satisfactory supplies at Smyrna and in London, all indicating that no very important advances in value can take place. During the past week, under pressure, there has been a slight increase in price, amounting possibly to about 25 cents a pound, but it is not believed that it can last.

Morphia remains unchanged, with a very slight demand.

Quinia during the past week has been in very active demand on the part of consumers alone. It is clear that throughout the country stocks are very much reduced, but supplies in second hands still seem sufficient to meet all requirements. The heavy demand referred to above has resulted in advancing the value of German quinine only about half a cent a pound. There is a greater degree of firmness on the part of holders, not so many offering their stocks in the market, but there does not seem sufficient firmness on their part to resist offers at the slightest possible advance over last month's prices. The sales of bark at Amsterdam last week brought forward very large offerings. But a small proportion, however, was sold, and at a decline from the prices of the previous sale of fully 25 per cent. Viewing the whole field, therefore, it does not seem probable that in the very near future any important advance can take place in the price of quinine.

Rhatany root is in very scarce supply, and has doubled in price during the past month.

Menthol.—As the autumn approaches, the demand for this article is very greatly increased. It is found, however, that the market both here and abroad is about bare. Cablegrams from Japan indicate that stocks there are exhausted, and that no further supplies can be expected before the next crop, which supplies cannot reach us possibly before December, if then. It is pleasant, however, to learn that the crop has been large, and that there will be very large supplies coming forward; though not in season to meet present demands. It may therefore be expected that before January arrives, higher prices than have ever been known will be paid for this very important article.

Carbolic Acid.—There seems a degree of firmness in price that is rather surprising, as the profound health throughout the country during this entire summer has made the demand light. There is no probability, however, as far as can be seen, of any advance in price, but strong probabilities of decline.

Chloride of Lime.—The same remarks may apply to this article. Enormous stocks are being held, anticipation of cholera visiting us having encouraged many to lay in stocks beyond absolute needs. As we have been spared the visitation of this fearful disease, there can be no expectation of higher prices, but in all probability this article also will steadily decline.

Senega root has suffered a still further decline, and in all probability will decline still more. Large users of this article should withhold entirely from buying.

Ipecac root has still further declined, owing to large supplies coming forward.

Oil of peppermint is in large supply, and the market continues to decline. You need not be surprised to find during the coming month very heavy declines from present prices.

Oil of rose has advanced in price. Reports are to the effect that supplies are not large, and, as the demand is active, naturally an advance in value takes place.

Chamomile flowers, German, are again lower. The crop has turned out to be a large one, notwithstanding the fact that the first information received was to the effect that the crop would be small. In the *Roman* variety there is no change. Demand is active and the price firm.

Cod-Liver Oil, Norwegian.—Lofoton, the highest grade, commands good prices and is in steady demand. Old or inferior oil can be bought as low as $18.50 per barrel, but buyers should not be led into the error of supposing this to be prime material, as it is not and cannot be.

Gum asafœtida continues in very short stock. In London there is none, New York carrying a larger stock of prime goods to-day than any other market. Our stock, however, is very limited, and prices are firm and advancing.

American saffron is in very close hands and held for higher prices.

Fenugreek Seed.—Good, bright seed is scarce and firm in price, with an advancing tendency.

Italian Anise Seed.—The new crop is now in port and is ruling at unusually low prices. We feel very confident that as the season advances prices will advance, and do not hesitate to advise purchases.

New York, Sept. 12, 1893.

CHICAGO LETTER.

The Economical Drug Store has passed out of the hands of the receiver into those of the assignee. A State-street store has taken the advertising effects of the Economical, and is now posing as the only cut-rate store in Chicago. If the Economical had been in the hands of a druggist, and had left foreign practices alone, it would have fared differently—at least in this World's Fair year.

A number of good papers were read before the Chicago Apothecaries Society at its annual meeting. Want of space forbids going into details, but the papers were of such character that they would be a credit to the most influential pharmaceutical society. Some of the papers were based on the possibility of harmony and concerted action, and, presuming that these desiderata were attainable, proposed to throw out telephones, postage stamps, newspaper "ads," express agencies, etc., etc., thereby making the life of the druggist endurable; others spoke of commercial tendencies—commercial charges for commercial articles, etc., etc. But what can the individual druggist do about shortening the hours and doing away with the telephone nuisance, unless his fellow-druggists do likewise? And who is there among druggists so childlike and optimistic as to believe in such a Utopia? Then again, some of the essayists threw away the idea of concerted action, and came out on the level and square for pooling the issue; the chief idea was: "Get a number of retailers together on a syndicate plan—and whatever they want, jobbers and manufacturers will concede." The syndicate will throw the buying, bookkeeping, etc., into the hands of the best adapted, and give the others a chance to see their trade waited on.

But alas! it is all talk and no action.

Talking about talk, the finest pharmaceutical talkers we have had here for a long time were our pharmaceutical guests from England. And how sensibly they did talk about the apprentice system and college education! The beauty of the talk was that these men were absolutely non-partisan—did not know about the once popular cries for stock corporations and in regard to the value of the dear Alma Mater as an employment bureau or an intelligence office for students. These Englishmen came along and swept the cobweb of moonshine away with one bold stroke. Said the Extra-Pharmacopœia Martindale: "The greatest mistake a student can make is to work during his college term." The greatest boon that ever came to a student is to retire from mercantile pursuits and devote himself to his studies. By and by

America will follow European examples in this respect. A student attending to store duties during college term is an anachronism in civilized countries. But reforms come gradually. Of course the old-time schoolmaster will fret and expostulate for a while—so did the teamster when railroads began to carry freight from New York to Chicago, instead of the road wagon. The teamster's fretting and swearing did not avail much after all.

Yours internationally,
"PLAIN TALK."

Chicago, Sept. 13, 1893.

IMPRESSIONS OF PROF. DR. PETTENKOFER.

Heroes are always interesting, and surely among scientists of recent years none can lay more legitimate claim to this title than the subject of our sketch.

When Dr. Koch's theory with regard to cholera was exciting the deepest attention, and he had just introduced scientific society to a new bacillus, Professor Pettenkofer took exception to certain of his views and demonstrated the correctness of his own position by swallowing countless millions of the much dreaded bacilli in the presence of a distinguished gathering of savants. This may sound like a very simple incident, but in the face of the almost overwhelming evidence presented by Dr. Koch to the effect that these bacilli were the cause of cholera, it was an act of the greatest heroism. One might expect to find in such a man a square-jawed, sour-visaged pessimist, or at least a dashing, careless dare-devil.

I had received a wire at Hamburg, stating that the Professor would see me in Munich the next morning at 11 o'clock. In due course I arrived in Bavaria's beautiful capital and was driven to the quarters indicated by the telegram. This proved to be the royal residence, in which the eminent chemist has his lodgings by virtue of official connection with the Government.

Imagine my surprise on being greeted by as open-faced, whole-souled, and genial an old gentleman as ever lived. My business being made known, we found that nothing could be done until the morrow. I accepted of the opportunity to bring the conversation around to personalities, and found him quite ready to tell a younger man something of his life and work. From appearances, I should have said that he was 55 years old, and could scarcely credit the fact that he had just passed his seventy-fifth birthday. Most of his long and active life has been devoted to the University of Munich, and his memory dates back to incidents which have now passed into history. He it was who induced Prof. Liebig to come to Munich. They had been school-boys together, and the King saw that Prof. Pettenkofer more than anyone else would probably be able to influence Liebig in a decision so important.

While Bavaria's present King is under confinement as a lunatic, and his predecessor would undoubtedly have found himself in the same situation had he not committed suicide, the little kingdom was most fortunate in having had two monarchs—Maxmilian II. and Ludwig I.—who were both ambitious to build up the scientific and artistic importance of their capital beyond that of any other city of Europe. In fact, it was the boast of Ludwig I. that he would make Munich such a centre of art and learning that no one could say he had seen Europe until he had seen his capital. The influence of these two monarchs is everywhere seen and felt, and nowhere more than in the wonderful University which boasts of such names as Liebig, Pettenkofer, and Voigt.

I spent a full week with Prof. Pettenkofer, much of the time in his laboratory, and was deeply impressed, not only with his charming personality and genial disposition, but with his most extraordinary energy. There he is at 75 years of age wrestling with the most profound problems of chemistry, delivering a lecture every morning at 7 o'clock, as active in thought and in movement as the average man of 50.

His apartments in the Palace are on the top floor, and in bidding me good-bye he insisted on coming down the entire 110 stairs, boasting of the fact that the exercise was good for him. He laughingly referred to the cholera episode, and, patting himself complacently, said in broken English: "Mine stomach ees goot enough to look after 'em," referring of course to the bacilli. It was with sincere regret that I took my departure, for I certainly had never encountered a more pleasant picture of honorable old age than Prof. Pettenkofer.

R.

MR. HAYNES AND THE WHOLESALE DRUGGISTS.

To the Editor of the BULLETIN OF PHARMACY:

Many members of the National Wholesale Druggists' Association will not, perhaps, appreciate the animus which doubtless prompted Mr. D. O. Haynes, publisher of the *Pharmaceutical Era*, to write the article which appeared in the August 15th issue of his journal, entitled: "Meeting Places of the N. W. D. A."

Having attended the Montreal meeting as the representative of Messrs. Parke, Davis & Co., the manufacturers aimed at, I feel personally responsible for any charges that could be justly brought against that firm, so take occasion to deny *in toto* the unwarranted and malicious insinuations which he has succeeded in making in his miserable screed.

The most remarkable feature about the whole diatribe, however, is that Mr. Haynes expressed himself, while *en route* to Montreal in company with a number of wholesale druggists who had assembled in Detroit for the purpose of making the journey together, as avowedly in favor of the City of the Straits as the next meeting place. After he arrived in Montreal he experienced a sudden change of heart, and exerted himself to the utmost in favor of a place other than his own city.

Mr. Haynes, in his editorial, says: "It is carrying the wire-pulling a little too far when some manufacturer puts his traveling men to work on the case weeks in advance, and pays the expenses of jobbers to the meeting provided they strongly advocate his town for the next meeting." A refutation of this silly slander is hardly needed, and were the charge not so puerile as to deserve absolute disregard an apology should surely be demanded of Mr. Haynes by the Association for his malicious and false insinuations.

The facts are, that at the proper time an invitation was extended at the Montreal meeting by the wholesale druggists and manufacturers of Detroit to the N. W. D. A. to hold their next meeting in Detroit. A similar invitation was extended from Milwaukee. They were both referred in the usual manner to the committee appointed for the selection of the next place of meeting. In due course a majority report was brought in by the committee, recommending the acceptance of Detroit's invitation, and a minority report in favor of Milwaukee. When the two reports were acted upon by the Association, 38 voted in favor of the majority report and 36 for the minority report. The 38 members voting in favor of Detroit were all *Wholesale Druggists*, myself not voting, while the opposition, aside from those whose location naturally led them to vote for Milwaukee, was almost entirely confined to what may be termed the *lobby* of the Association. It may be assumed, therefore, that a large majority of the *Wholesale Druggists* desired that the meeting should be held in Detroit, but their efforts were almost defeated by the action of certain manufacturing houses, assisted by Mr. Haynes, who are associate members of the N. W. D. A., and only allowed to vote by courtesy, who now come to the front through their mouth-piece and accuse the N. W. D. A. of "having been pulled and hauled by the invitation and influence of manufacturing firms."

From the latter quotation it may be accepted that Mr. Haynes fully coincides with the estimate I place on the importance of the opposition to Detroit at Montreal, but his real intent in dictating the recent article was to make it appear that the offending party was Parke, Davis & Co., who, with no desire to be lavish or ostentatious, did seek to show the visiting wholesalers their appreciation of their friendly patronage in the past. A similar invitation to that extended to the Association at Montreal was extended at their Washington and Louisville meetings, but on these occasions the Association selected Louisville and Montreal, and had the option in the present instance of selecting Milwaukee, had a majority of the members in attendance preferred to have done so.

It is sincerely to be regretted that Mr. Haynes, who is ostensibly one of the hosts of Detroit, since his residence is in this city, should seek to embitter the feeling at the forthcoming meeting by the introduction of such inhospitable, uncalled-for, and personally unpleasant sentiments, simply because he entertains a personal animosity towards Parke, Davis & Co., who do not advertise in his journal, and here takes advantage of an opportunity, which he never lets pass, for assailing them with unwarranted insinuations. The wholesale druggists of Detroit, and the allied interests, certainly will extend to every member of the Association in attendance at the meeting in Detroit a warm welcome, and have no sympathy for the bad taste displayed by Mr. Haynes in expressing the sentiments which he doubtless was called upon to print by rival manufacturing concerns, who regard his journal as their organ.

Very truly yours,

WM. M. WARREN.

Detroit, Mich., Sept. 12, 1893.

To the Editor of the BULLETIN OF PHARMACY:

About a month after I read my paper on "Change the Laws,"* before the A. P. A., all sorts of letters began to pour in from would-be quacks, *bona fide* quacks, anonymous communications, letters with fictitious signatures, and others with full name, but unanimously asking why I attacked Dr. Hammond, thus helping P., D. & Co. in their fight against the "great" discoverer.

I wish to say that over four years ago I wrote a similar paper, published in various journals, against the growing trademark curse, and that at a time when Dr. Hammond was totally unknown to me. Since then I have heard more (much more than I should have desired) about him, and if Dr. Hammond or his adherents think the coat I sewed fits them, I don't object to their putting it on. It is certainly befitting that he should stand at the head and as representative of trademark impositions—and I must say I am astonished that Parke, Davis & Co. were for one minute deceived by his journal advertising, if they knew at that time what I have heard since about the man. If it is true that this man, as officer of the army during the period of his country's great trial, was convicted of having conspired with army contractors to rob his Government, and therefore was dropped from the army list, they might have known that he was ready to perpetrate any fraud, and the "Hammondine" fake would only be a XXX potency of his fakes. But my paper on trademarks is directed now, as years ago, against all sorts of fakes and frauds, and whoever wants to come under that head is welcome.

Only a few months ago I was called upon by medical friends to look into the Hammond preparations—which I did, and I was astounded at the picture I was called upon to behold. My anonymous opponents might as well ask Dr. Ernest Hart, of the Pan-American Medical Congress, whether he had Dr. Hammond before his mind's eye when he poured the cup of wrath and scorn against discoverers of nostrums, as so ably done by that gentleman according to the meagre reports we have. If P., D. & Co. got into hot water by allowing Hammond to deceive them, it serves them right; but it is never too late to mend, and I can only congratulate them on the courage and pluck with which they have tackled the fraud since finding him out.

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* See page 395 of this number of the BULLETIN.

W. BODEMANN.

Chicago, Sept. 21, 1893.

IMPORTS OF DRUGS, CHEMICALS, ETC., AT THE PORT OF NEW YORK, FOR THE MONTH OF AUGUST, 1893.

Aërated water, 205 bbls., 160 cases, 20 packages.

Arsenic, 289 casks, 100 kegs.

Alizarin, 284 casks, 18 bbls., 3 cases.

Aloes, 623 boxes, 165 cases, 10 bbls; extract of aloes, 7 cases.

Anilin, crude, 28 drums; anilin salts, 432 cases, 128 casks, 104 bbls.; anilin oil, 5 drums.

Albumin, 252 cases, 52 casks, 20 bales; blood albumin, 158 bags, 71 cases, 6 casks, 20 bbls.

Ammonia, muriate of, 20 casks; sal ammoniac, 10 casks; ammonia carbonate, 100 packages, 24 casks; ammonia water, 1 drum; nitrate of ammonia, 10 casks.

Anise seed, 2 bales.

Apothecary's wares, 73 packages, 7 cases.

Alum, concentrated, 90 bags.

Borax, 1,945 casks, 3,865 sacks.

Bark, 6 bags, 14 bales, 60 bbls., 34 seroons, 3 casks.

Belladonna extract, 1 case.

Buchu leaves, 91 bales.

Boracic acid, 2 bbls.

Chemicals, 1,875 casks, 809 cases, 75 packages, 23 bbls., 11 demijohns, 9 carboys, 7 drums, 2 baskets; chemical salts, 3 cases; chemical preparations, 41 cases, 13 bbls, 8 casks.

Chemical balances, 1 box, 1 case.

Chamomiles, 30 cases, 34 casks, 30 packages, 5 bbls.

Cassia, 363 bales; cassia vera, 50 packages.

Cocaine, 2 cases.

Colocynth, 10 cases, 1 box.

Chromnatron, 155 casks.

Cuttlefish bones, 90 straps.

Cacao butter, 68 bags, 36 cases, 2 bales.

Creasote, 4 cases.

Camphor, 173 cases.

Capsicums, 200 bags.

Cardamoms, 5 packages.

Copaiba balsam, 8 boxes.

Cod-liver oil, 500 bbls., 115 cases.

Carboleum, 521 iron tubes.

Chlor. barium, 47 casks.

Creolin, 80 cases, 170 demijohns.

Coriander seed, 84 bags.

Carbolic acid, 70 drums, 15 cases, 25 casks; solid carbolic, 140 cases, 54 casks.

Crude carbonate, 5 casks; crystal carbonate, 112 bbls.

Castor seed, 110 bags; castor beans, 852 bags; castor oil, 300 bags, 300 cases.

Drugs, 124 packages, 122 cases, 10 casks, 24 bags, 12 bales.

Druggists' sundries, 13 cases.

Dried leaves, 6 bales.

Dried flowers, 10 bales.

Essential oil, 49 cases, 26 packages, 10 boxes.

Eau de Cologne, 20 cases.

Ether, 8 cases.

Fuller's earth, 3,888 bags; fuller's powder, 10 cases.

Gentian roots, 30 bales.

Galls, 102 bags.

Gum tragacanth, 58 cases.

Glycerin, 120 drums, 20 iron drums.

Herbs, 368 bales, 46 casks, 11 cases, 6 bags, 3 hampers; herbs and roots, 11 bales, 11 packages.

Haarlem oil, 42 cases, 1 box.

Iodine, 106 bbls., 70 kegs.

Ipecac, 12 bales.

Jalap, 4 sacks.

Liquorice, 2 casks; liquorice root, 45,881 bales, 5,044 bundles, 486 bbls., 1 bag; liquorice paste, 450 cases; liquorice wood, 9 bales.

Leeches, 36 packages, 10 cases.

Lime, citrate of, 35 casks; chloride of, 20 casks; essential oil of, 3 cases; distilled oil of, 2 cases.

Leaves, 35 bales.

Medicines, 11 packages, 30 cases, 1 cask; medicinal seeds, 11 cases, 6 bags.

Medical drawings, 1 case.

Malt extract, 66 casks, 5 cases.

Myrbane salts, 11 casks.

Manna, 13 cases, 5 boxes.

Milk sugar, 18 cases.

Mercury, 27 cases, 2 packages.

Musk, 2 boxes.

Nux vomica, 2,006 bags, 1 box.

Natron, 19 bbls., 8 casks.

Otto of roses, 2 cases.

Oxalic acid, 218 casks.

Orris root, 13 bags.

Opium, 49 cases.

Pyrogallic acid, 2 cases.

Patchouli leaves, 110 bales.

Pepsin, 1 cask.

Perfumery, 277 packages, 24 cases, 2 sacks.

Potash, 110 kegs, 68 casks, 35 drums; chlorate of potash, 940 kegs, 40 casks; chlorate of potash crystals, 200 kegs; chloride of potash, 150 kegs; carbonate of potash, 63 casks; prussiate of potash, 38 casks; hydrated carbonate of potash, 12 casks; muriate of potash, 1,000 bags; sulphate of potash, 1,000 bags.

Purga, 2 bales.

Phosphate, 10,000 bags.

Phosphoric acid, 40 demijohns, 20 cases, 31 carboys.

Picric acid, 5 casks.

Pharmaceutical products, 109 cases.

Prussic acid powder, 4 casks.

Quinine, 119 cases.

Roots, 191 bales, 36 bags, 5 cases; roots and seeds, 9 bales, 3 cases.

Rose-water, 100 demijohns.

Stramonium leaves, 14 bales.

Sarsaparilla, 157 bales; sarsaparilla root, 31 bundles, 4 bags.

Sulphate, 64 casks.

Safrol, 20 demijohns.

Squills, 31 bags.

Surgical needles, 1 case; surgical wood wool and cotton, 9 packages.

Sweet nitre, 1 drum, 1 cask.

Salts, 68 packages, 10 casks, 6 drums.

Sponges, 1,104 bales, 587 bbls., 42 cases, 11 packages.

Soda, 572 bbls., 228 casks; bicarbonate of soda, 1 cask; phosphate of soda, 53 casks; nitrate of soda, 38,679 bags; chlorate of soda, 260 kegs.

Senna, 182 bales.

Tartar, 249 casks, 112 bags; raw tartar, 43 casks.

Tinctorial extract, 100 casks, 50 cases, 24 packages, 10 bbls.

Ylang-ylang oil, 4 cases.

BOOK REVIEWS

The Leisure Library.

The Leisure Library Series, now in its seventh year of publication, while published in the interests of the busy practitioner, yet embodies in its several series works upon many subjects which are alike of interest to both druggists and physicians.

"The Uses of Water in Modern Medicine," by Simon Baruch, M.D., presents the subject in a most practical manner. Recent advances in therapeutics have developed important effects of water which are out of the limits of the lines usually drawn by authors on this subject.

"Taking Cold," by F. H. Bosworth, M.D., treats of how we take cold, the parts affected by taking cold, prevention of a cold, clothing, bathing, exercise, treatment of a cold, etc., etc.

"Cholera," Volume I and Volume II, by G. Archie Stockwell, M.D., F.Z.S., gives information upon this subject which it would be difficult to obtain elsewhere.

"On the Determination of the Necessity of Wearing Glasses," by D. B. St. John Roosa, M.D., will prove a valuable addition to the druggist's library.

These books are all issued in attractive form, in durable paper covers at 25 cents each, or in cloth at 50 cents per copy. A prospectus, and detailed information regarding the series, will be forwarded, upon request, by the publisher, Mr. George S. Davis, Detroit, Mich.

Reactions: A Selection of Organic Chemical Preparations Important to Pharmacy in Regard to their Behavior to Commonly Used Reagents. By F. A. Flückiger, Ph. D., M.D. Revised and enlarged by J. B Nagelvoort, Analytical Chemist to the Pharmaceutico-Chemical Laboratory of Parke, Davis & Co., Detroit. Authorized English Edition. Published by George S. Davis, Detroit, Mich. 1893.

This work the pharmacist and chemist will find a most valuable guide for the identification and examination of organic preparations. While the new United States Pharmacopœia is very complete in this regard, yet "Reactions" will be found a valuable companion-piece to this the seventh edition of the U. S. P. It supplements many of the U. S. P. tests, and includes many preparations, giving tests therefor, which the Pharmacopœia makes no mention of whatever. Indeed, the work is so complete that every now and then tests are published as new, which, however, will be found upon referring to the respective pages of "Reactions." For example, the detection of eserine:

From the Pharmaceutical Journal and Transactions, Sept. 2, 1893.

"S. J. F. Da Silva describes in detail a new reaction of eserine, which appears to be extremely sensitive, since he claims to be able to detect 0.005 gramme of the alkaloid by its aid. A minute fragment of the alkaloid, or of one of its salts, is placed in a porcelain capsule and dissolved in 1 or 2 drops of fuming nitric acid. The clear yellow solution thus obtained, when heated on a water-bath, gradually changes to orange color, but, on evaporating to dryness, stirring meanwhile with a glass rod, the residue becomes green. This residue is soluble in water, more so in strong alcohol, and also in concentrated sulphuric acid, forming green non-fluorescent solutions, which, on evaporation, leave the substance unaltered in color. A drop of nitric acid, allowed to fall upon the green residue on the water-bath, causes it to turn blue in places where the acid is not directly in contact with it, and later a reddish-violet solution is formed, which changes after a while to greenish-yellow. This solution, when diluted, is fluorescent, appearing of a blood-red color by reflected light and greenish-yellow by transmitted light. Ammonia does not affect the color of the green substance, which M. Da Silva proposes to name chloreserine.—*Comp. Rend.*, cxvii, 330."

Reactions. Page 52.

"(*a*) An amorphous residue of a permanent blue color is obtained if a trace of Eserin, or one of its salts, is evaporated in the presence of an excess of ammonia; this blue alkaloid dissolves in dilute acids with a red color; sensitiveness 0.00001 g. (1-100000). The solution has a beautiful red fluorescence in reflected light; when evaporated, it leaves a residue that is green at first, changing to blue afterwards, the blue residue being soluble in water, alcohol, and chloroform, but not in ether. Chloroform extracts the blue color from the watery ammoniacal solution only partially. The blue solutions are reddened at first by H_2S, and discolored afterwards. The blue color is restored by expelling the H_2S on the water-bath.

"(*d*) A red fluid is obtained when 0.010 g. Eserin or its salicylate, 0.050 g. of slacked lime, and 1 c.c. of water are added together. Warmed in a water-bath, it turns green, and a piece of red litmus paper suspended in the test tube colors blue; a glass rod moistened with HCl gives off the well known white clouds characteristic of an ammonia reaction.—The green solution does not lose its color by evaporation. Baryta water added to an Eserin solution gives a white precipitate, that turns red when strongly agitated; sensitive to 0.00001 g. (1-100000). Dissolve for this test 0.010 g. Eserin salicylate in 100 c.c. of water (1:10000). One c.c. of this, agitated with 5 c.c. of baryta water, gives a bright pink-red colored fluid. One c.c. of the 1:10000 solution diluted to 10 c. c. will give a faint pink-red colored fluid, when shaken with 5 c.c. of baryta water; 1 c. c.—1:100,000."

Such, therefore, is the character of "Reactions," a work that will prove a most valuable addition to the library of the pharmacist and chemist.

With reference to the typographical work, it is most legibly printed on excellent paper, attractively bound, and contains as a frontispiece an accurate portrait of Professor Flückiger. The book will be forwarded postpaid upon receipt of price, $2.00.

This Month's Magazines.

For mental relaxation after a hard day's work we commend the following:

M'CLUER'S MAGAZINE FOR SEPTEMBER.

The article by Ida M. Tarbell on "Pasteur at Home," with an account of the work done at the Pasteur Institute, is alone worth the price of the number, which, by-the-bye, is issued at the modest sum of 15 cents. The insight into the every-day life of Dr. Edward Everett, by Herbert D. Ward, is like a draught of cool water in a thirsty land—a wonderful impetus to anyone weary and ready to give up. The graphic description of the Exposition Flyer from New York to Chicago is one of the most interesting articles on rapid railroad traveling we have read for some time. A unique feature in the number is entitled "Human Documents," consisting of portraits taken at different ages of well known personages. In the present number is the Emperor of Germany at the age of 10, 15, 25, and 30. "Among the Gorillas," "Dreams Go by Contraries," "An African Story," and "Stranger than Fiction," help to make up a number which, for interesting information and bright, cheerful reading, is a welcome interlude to the daily routine of work and worry.

SCRIBNER'S MAGAZINE FOR SEPTEMBER.

There is in the September number of *Scribner's Magazine* a sketch of Izaak Walton, author of that delightfully quaint book "The Complete Angler." It is illustrated by dainty bits of river scenery in Derbyshire, where he found his favorite spots for the exercise of his craft.

"The Machinist," the fifth of a series of articles on "Men's Occupations," keeps up the reputation of its predecessors, and opens up to the reader a world of facts, either entirely new, or little studied by the average observer.

Amongst other excellent papers contained in this number, we may mention "The Tides of the Bay of Fundy," "Clothes, Historically Considered," "An I. O. U," the continuation of "The Copperhead," "The Opinions of a Philosopher," and a most pathetic love story, "The Sharpness of Death."

The Physician's Perfect Call List: New and Revised Edition. By G. Archie Stockwell, M.D., F.Z.S. Sent postpaid on receipt of price, $1.50. Regular trade discount upon quantity orders. George S. Davis, Medical Publisher, P.O. Box 470, Detroit, Mich.

This Call or Visiting List has just been revised to date, and its posology embraces the very latest additions to therapeutics. The fact that it is now in its eighth edition is sufficient evidence of its merits. It is simple in arrangement, the most complete of any of the works of the kind, convenient for the pocket, and perpetual in application. The holidays are fast approaching, and druggists upon the lookout for a suitable gift for their physician patrons will find it difficult to select a more appropriate article than this Visiting List.

Brestowski's Handwörterbuch d. Pharmacie. Tenth edition.

This work continues to maintain its high standard of value and utility. The tenth edition concludes with Hoffmann's isonitril and violet reactions. The familiar names of Reuter, Waage, Elsner, Virchow, Siedler, etc., appear again, as before, attached to special articles.

J. B. N.

Van Goslett: Say, Wogers, what cahn a do to pwewent my twousers from bagging?

Rogers: Take a dose of Rough on Rats. That will stiffen your knees.—*Time.*

Prof.: What is the composition of silica?
The Student: Silicon, lithium, and calcium.
Prof.: How do you make that out?
The Student: Why, Si-Li-Ca.—*Corpuscle.*

Dr. Reaper: Remember the Sprigginses, don't you? I was their family physician once for ten years.

Dr. Probe: What parted you, then?

Reaper: They gave out.—*Truth.*

PARDONABLE SLANG.

The Animal: Well! How do I look?
The Man: B-b-b-bully!—*Life.*

IF I SHOULD DIE TO-NIGHT.

If I should die to-night,
And you should come to my cold corpse and say,
Weeping and heartsick o'er my lifeless clay—
If I should die to-night,
And you should come in deepest grief and woe,
And say, "Here's that ten dollars that I owe,"
I might arise in my great white cravat
And say, "What's that?"

If I should die to-night,
And you should come to my cold corpse and kneel,
Clasping my bier to show the grief you feel—
I say, if I should die to-night,
And you should come to me there, and then
Just even hint about paying that ten,
I might arise the while,
But I'd drop dead again.

—*Quincy Spice Box.*

A pretty young schoolma'am in Kaimath County, Ore., puzzled the powers of pronunciation of her class recently with the word "husband" chalked on the blackboard. To help them out she asked: "What would I have if I should get married?" "Babies, ma'am," shouted the class in unison.—*New York Sun.*

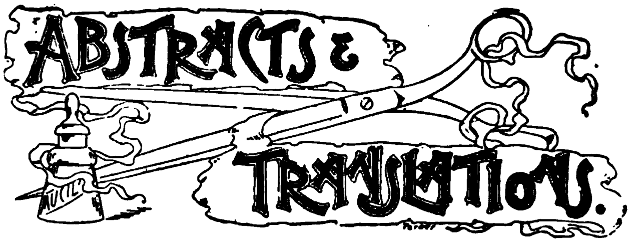
The following is the latest joke by the junior apprentice: "Stamps, please," curtly said the young lady. "With or without?" queried the facetious drug-clerk. "With or without! Without what?" was the indignant inquiry. "Whiskers, ma'am. One-centers have no whiskers on Columbus. The two-centers have."—*Exchange.*

Yabsley: Well, what's the latest in the racing line?

Mudge: The horse I bet on, usually.—*Indianapolis Journal.*

"Mudge" should supply his jockey with all the latest turf improvements, for example—

The man was in a brown study when he went into the drug store. "What can we do for you?" inquired the clerk. "I want black something of something," he said. "Have you got any?" "Probably we have," replied the clerk, "but you'll have to be more definite to get it." The customer thought for a moment. "Got any black sheepskin of something?" he asked. "No; we don't keep sheepskins. We have chamois skins, though." "That isn't it, I know," said the customer. "Got any other kind of skins?" "No." "Skins, skins, skins," repeated the man, struggling with his slippery memory. "Calfskin seems to be something like it. Got any black calfskin of anything?" "No, not a one," and the clerk laughed. The customer grew red in the face. "By jove," he said, "if it isn't a skin, what in thunder is it?" "Possibly it's a hide,'' suggested the clerk." "That's it! That's it!" explained the man. "Have you got any black hides of something or anything?" The clerk shook his head sadly, as the man tramped up and down the store. "Got any black cowhide of anything?" he asked, after a moment's thought. The clerk's face showed a gleam of intelligence, and then broke into a smile. "Possibly it is black oxide of manganese you want," he said quietly. The customer almost threw his arms around the clerk's neck. "Of course, that's it," he exclaimed. "I knew there was a skin or something somewhere about the thing," and he calmed down and waited for what he wanted.—*Detroit Free Press.*



Extract of Chestnut Bark.

In a Foreign Office Report (No. 1270, Annual Series, 1893) the following particulars are given respecting this new tanning material prepared in the neighborhood of St. Malo, France: "This export is developing, hitherto chiefly sent to Belgium, though a Glasgow house has taken some of late. It is used in the process of tanning leather, being made of the bark of chestnut trees. The export has reached 156 tons to 200 tons per month, and it is expected that the new manufactory of this essence now about to be opened at Dinan will double the export hence. The only manufactory in this district at present is at Montreuil-sur-Ille in this department." This information supplements that conveyed in a Foreign Office Report (No. 578, Annual Series, 1889) on the trade of Corsica, where it is stated that "Chestnut extracts (from Ajaccio) for tanning purposes have been in demand for England, and considerable quantities have been shipped." It is said that these chestnut extracts are used for tanning purposes to modify the color produced by hemlock extract obtained from the hemlock spruce (*Tsuga canadensis*).—*Kew Bulletin*, August, 1893.

Rose-Growing and Pressing in Saxony.

The experimental rose plantations started two years ago in the neighborhood of Leipzig have given such brilliant results that they are, the Belgian Consul states, being extended. The plants have thriven well through the long and severe winter of 1892–93, and their condition in May left nothing to be desired. It has been shown that it was a false idea to suppose that these flowers require Oriental heat to prosper and acquire a delicate perfume; the experiments at Leipzig having proved that a cool temperature, and even a little damp, is the first condition of a good yield, whilst great heat is the enemy of roses. A special factory has been established in the middle of the plantations by the house which made the first experiments, and it is to be put in operation this summer. Provision is made for dealing each day—we quote the Consul—"with 50,000 kilogs. of leaves, producing, at least, about 40 kilogs. of oil, water, and pomade of roses, valued at 40,000 to 50,000 marks. To start with, the factory will have three boilers providing 300 square meters of heated surface, and the roses will, immediately they are plucked, be transferred to the macerating jars, where, thanks to this procedure, they will deposit their perfume in all its freshness and delicacy. Only the quantity of leaves required at the moment will be collected, a few minutes sufficing to transfer the leaves from the plant to the machines." *Commerce* of the 26th July adds: This expedition is favorably contrasted with the procedure followed in Turkey and in France, where frequently the roses plucked in the morning are only distilled in the evening. As to the oil of roses produced in Saxony during last year, it is claimed that not only did it not fall short on comparison with the Turkish product, but that it was better than its rival in delicacy and strength and the lasting character of its perfume.—*Kew Bulletin*, August, 1893.

The Incomplete Pharmacist.

At a meeting of the Dundee Chemists' Assistants' Association some time ago, Mr. Walter MacEwan, a chemist and druggist who has a considerable reputation in Scotland as a novelist, read a paper entitled "The Incomplete Pharmacist." The man whom Mr. MacEwan had first in view was one Euonymus, whose "Treasure" took the form of a black-letter book published in the year 1559. This "Treasure of Euonymus" is really a Latin work on pharmacy by Conrad Gerner, a German, done into English by a scholar of Oxford. There is in it much that is quaint and strangely nineteenth-century-like, about all of which Mr. MacEwan had something to say; but it is with the latter part of the paper we are more concerned at present.

It was one of the old pharmacists' peculiarities, said the author, to use a still in all possible ways and for all possible purposes. How many are there of us who have never in our business used a still at all! We are content with all the cheap and nasty ways of "faking" up waters: rubbing the essential oils with calcium phosphate and water, or teasing them with wool and percolating with water, or shaking them up with boiling water and filtering, and so on—all the ways but following the plain B.P. instructions of distilling the barks, fruits, or what not, and thus getting a product so altogether superior that there is no comparison. I have known shops (he continued) which did not have a percolator or a water-bath or a screw tincture-press. What can a boy taught in such a place know of pharmacy save that in a far-off mysterious region called "the wholesale" there are evolved tinctures and pills and concentrated infusions with marvellous knowledge and appliances, such operations being impossible to the retail man, and the products thereof to be received with humble thankfulness and true belief? He comes to take the wholesale preparation as his standard, and if you show him that black draught bought by the barrel has neither the delicacy nor the effects of that made B.P., and that concentrated infusions when diluted have neither the consistence nor the taste nor the effects of the real thing, he only says "so much the worse for the real thing." It is difficult to convince him that even the best wholesale house cannot make decoct. aloes co. 1 in 4 without involving as great a contradiction as the statement that 2 and 2 make 5. He comes to believe that grey powder and blue pill are beyond the skill of the retail pharmacist, and that the B.P. preparation of vin. ipecac. is a merry little jest of the Pharmacopœia editors. For the guileless young person dwelling thus under the fatherly wing of the wholesale, the Minor comes as a rude awakening.

Mr. Mair advocates the formation of a class for the teaching of the younger men the elementary theories of their trade. The idea is good, but the necessity for it deplorable. Where, in the name of—of Pharmacy—should a young man learn that but in his shop? He does not go into a chemist's shop to do the mere mechanical grocery work of the place. He goes to learn to be a pharmacist; and if his master does not make him one, the master has surely failed in his duty. There are masters, I know, almost affectionately anxious to teach the beginner the higher side of his calling; there are others not so anxious. Some may say, "I'm too busy—don't have time for such unprofitable jobs. I'm a business man, and must mind my business." To these the answer is succinct: "If you don't have time to teach an apprentice, don't take an apprentice. If your trade is so good, better take an assistant, and don't help to flood the market with untaught young fellows, who, on being asked what they have done in your pharmacy, make rueful but exhaustive answer—'Four years.'"

So the matter is plain enough. A man can't have a thing without its price. If he takes an assistant he must spend money paying him; if he takes an apprentice he must spend time teaching him. This is the dilemma. The choice of horns is free.

And now let us, who are not masters, take ourselves into a corner by the ear and meditate upon our sins. Before a man can make a pharmacist of anybody he must have tractable material. What kind of material does he often get? Let us call the young gentleman "Euonymus." Well, Euonymus executes his first duty—say, of washing a mortar—so faithlessly that supposing the mortar to have been used first for guaiacum or calomel and then for carbonate of ammonia, the astonished dispenser sees his materials turn blue-green or black. Then Euonymus, rather than take the trouble to reduce his materials to their least common measure while making a tincture, chucks in roots, seeds, etc., almost whole, and lets osmosis take its chance. I have known this young gentleman make tinct. card. co. by maceration with whole or nearly whole raisins, and eat them afterwards plump and juicy out of the half-pressed marc, and that with much satisfaction. I have known him make it by percolation and put the raisins in altogether on the top of the other things and then whack them into a thick impervious plug which the spirit could by no means penetrate. I have known him spoil a batch of tinct. cinchon. co., and this was the manner of his doing it: He had made half a gallon and was 8 oz. short. He concluded to add 3 oz. of water and 5 oz. of rectified spirit, and thus produce the required 8 oz. of proof. These quantities do not make quite 8 oz., but that is not the point. He added the spirit and water separately. Had he put in the rectified spirit first, it might have saved him, but he put in the water first, and the whole tincture became turbid, and was not brightened by the after-addition of the rectified spirit. It is easier to keep a thing in solution than to redissolve it after being thrown out.

Then Euonymus is perennially tired, and his first idea on being left behind the counter is to pull out a label-drawer and sit on it. Sometimes he pulls the drawer too far out and sits down on the floor in a whirlwind of labels. He is independent of a cork-presser, and uses his teeth instead of one, much to the delight of the patient who has to take the contents of the bottle. In dissolving a salt in a bottle, he puts his finger over the mouth of it instead of putting in a cork. This is perhaps a venial fault, especially if performed behind a dispensing-screen, but Euonymus performs it *coram publico*, and sucks his finger afterwards. He does not take the drop from the lip of a shop-round after using it, but lets it run down over the outside of the bottle, unless it be syr. tolutanus or something nice like that, and then he licks the drop off with his tongue. As in poor neighborhoods the same bottle is made to do service for many things, he likes to see how many strata of labels he can superimpose one upon the other. Often the outer label, being carelessly stuck on, peels off with the wrapper, and the label below announces to the bewildered observer that what appears to be castor oil in consistence and color is really tincture of rhubarb. Euonymus uses the most slender spatula he can find to dig the stiffest ointment—say, ung. resinæ in winter—out of a pot, and generally succeeds either in breaking the spatula or in springing a gob of ointment out of the pot and into his respected principal's eye. If sent to stir and cream an ointment diligently, he falls into contemplation, and the ointment receives, say, 3 parts of stir to 97 of contemplation. Being done with a greasy spatula he does not wipe it clean forthwith with a piece of paper, but throws it into a drawer among other greasy spatulas. In some establishments each man is made to carry his own spatula in his breast-pocket. With the blade up it may stab him under the chin as he bends down, with the blade down it may go through lining and into his trouser-leg; but these are details—the principle is good. Euonymus is always engaged in the pursuit of ever-vanishing pairs of scissors and penholders. If he but looks into a filter when nobody else is at hand (this is important), it bursts incontinently. If his wonder-working glance is cast upon a jugful of anything, and no one is there to see, immediately the bottom comes out of the jug, and its contents flow abroad, preferably over something that can be spoiled by them. If, alone, he reaches up for a bottle, straightway that bottle falls down and is broken into many pieces. Broken glass is ever about the path of Euonymus, the incomplete pharmacist, and confusion follows him. We all know the incomplete pharmacist: most of us have been the incomplete pharmacist.

Now, suppose we have a youth only indifferently anxious to learn, and an employer only indifferently anxious to teach, what becomes of him when out of his apprenticeship? He often leaves the trade altogether; with that we have nothing further to do save to rejoice. I have been told that in Aberdeen they grow an immense number of assistants for whom they have no further use, and who are, therefore, put into trucks, taken to the harbor and shipped to London. My informant was a gentleman of respectability. I admit that he was a drug-traveler, but even a drug-traveler may speak the truth in seasons of repentance, as it were, provided it does not interfere with his business.

The true theory of a pharmaceutical apprenticeship is, I take it, like the scale of a Centigrade thermometer. It begins at 0° with the Prelim., it ends at 100° with the Minor.* It may not coincide with the trade-apprenticeship, but the fact remains that a man cannot be said to have finished his apprenticeship till he has passed the Minor. I say his apprenticeship; his education will never be finished till he dies. But the rise from zero to 100° ought to be continuous. This is the point. Many fellows have said to me, "Oh, it's all nonsense pottering about for years before you go in for the Minor. You will have forgotten most of what you have learned by the time you go up. Just wait till six months before the exam., and then peg into it right on. Everything will then be fresh in your mind." This is the theory; the practice was shown by the last examinations, where two-thirds of the candidates failed. One may well afford to forget a great many of the facts he has been learning for years, if the mental training he has got remains by him for use. One might otherwise say that all the food a growing boy has eaten for years has been wasted because none of it remains in his stomach at the end of the time. The examinations are not merely a test of knowledge, they are a test of intelligence. If your intelligence has been trained by a constant endeavor through years to find out the why as well as the how of things, then you come to the tug of war in a much more athletic frame of mind. I don't deny that you will have to put in three months or so of steady, continuous grinding before you go up. But how much more good you will get from the grind if your mind is fitted to tackle it by a habit of thought! There was once a modest person who, on being asked if he could play the fiddle, answered, "I don't know; I never tried." There are lots of fellows who look upon the Minor as that gentleman did upon fiddling—utterly oblivious of the patient years of work required to make a satisfactory job of either. There are others who tell you that they know some ignorant duffers who have got through the Minor the first time. It is possible; but what do the users of this argument mean to prove? That it is a good and profitable thing to be a duffer, and that, therefore, they should say to themselves, "Go to, let us all be duffers; then shall we pass the Minor and be honored among our fellows"?

All sorts of hints, ideas, and scraps of information are constantly circulating in the air during a fellow's apprenticeship. If he, personally, has made any sort of a beginning, these accumulate and form a treasure, just as I have seen bee-keepers put plates of wax stamped with the beginnings of hexagonal cells into empty hives, and forthwith the bees began to build a honeycomb on this foundation. If the plates are not put in, the bees often make no honey, but just loaf around the free breakfasts and don't put a farthing in the bank.

By many students the Minor is looked upon as a high fantastic barrier, put up merely to keep people out of a sort of promised land. The curious antics of the examiners are regarded as ***Punch*** benevolently remarked concerning the vagaries of certain statesmen, "It's only their fun." All these recent improvements—the adding of what have been hitherto regarded as "Major" subjects to the Minor—are simply looked upon as further persecution of the luckless candidate, from a grim desire to see him squirm. After some years, I believe, however, that the pharmacy which does not own apparatus for the standardizing of galenicals, for the assay of opium, the testing of spirit of nitre, and the volumetric analysis of chemicals, will be looked upon as we now regard the shop which does not own a percolator or a water-bath.

If a chemist's education, instead of the slow growth of years, is the fungus of a few weeks' cram, then it is a sham. If he manages to scramble through the Minor, his certificate is a sham; his professional standing and claim for social recognition are a sham; in every sense he is the Incomplete Pharmacist.—*Chemist and Druggist*, July 29, 1893.

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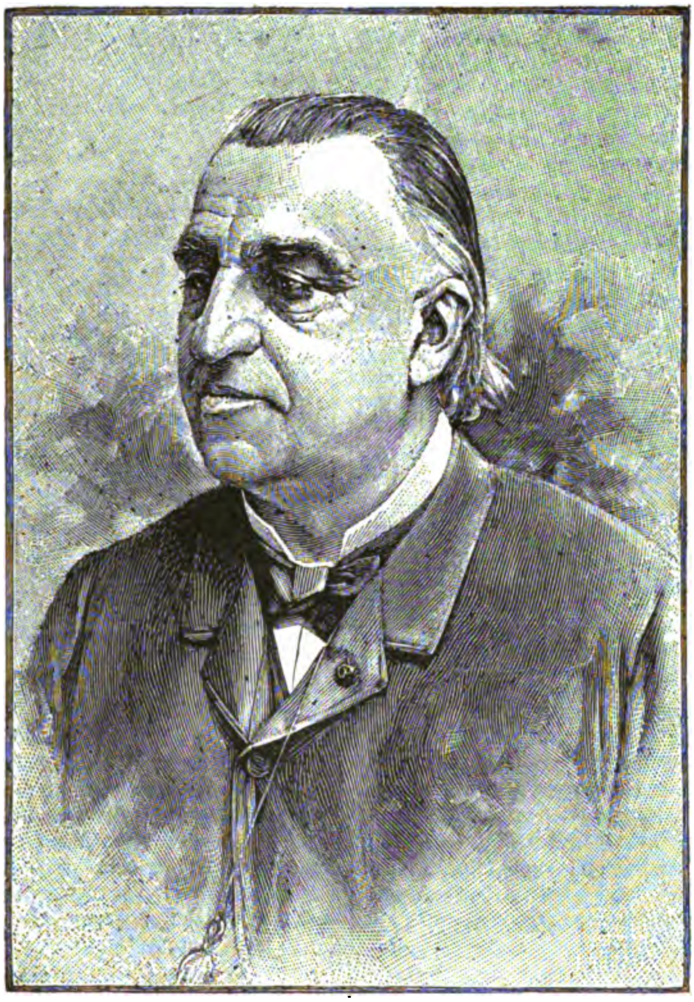
* "Minor" and "Major," of course, correspond to our Junior and Senior examinations.

Professor Charcot.

On the 16th of August died Jean Martin Charcot, physician, philosopher, and scientist. He was one of the *grandes gloires* of the French nation, and one of the princes of the medical profession. Dr. Charcot was born in Paris in 1825. His father and grandfather were carriage-builders, but from boyhood the future *savant* showed scientific tastes. As a student in the Paris hospitals, and as a junior member of the profession, Charcot passed through a highly successful career, and at the early age of 35 he was appointed Professor at the University of Paris. Two years later he joined the medical staff at the Salpêtrière, and it is with this great hospital that his labors and his reputation will ever be associated.



As a teacher of medicine, Charcot occupied an absolutely unique position. His bi-weekly lecture at the Salpêtrière was a sight, once seen, never to be forgotten. The vast audience of medical men and students gathered from every corner of the earth, and listening with breathless attention; the veteran *savant*, active and alert, painting his "word-pictures" with a vivid terseness that sent the lesson home and riveted it in the memory, were both exceptional spectacles in medical schools. Charcot possessed in a remarkable degree those natural gifts that give the highest success in teaching. Brimming over with energy and enthusiasm, he had the rarer faculty of being able to call forth the energy and enthusiasm of others. His personality compelled the admiration of those who came in contact with him, and his pupils literally worshipped him, not after the fashion of the nineteenth century, but as the great masters of olden times were worshipped by their disciples.

Charcot won a world-wide reputation as a physician. From far and near, patients journeyed to seek his help. Most of them were cases of chronic nervous disease, and many of them beyond the aid of earthly science. All, however—no matter what the result of their interview might be, no matter whether they learned that they might yet hope or knew that the fiat had gone forth—came away with a conviction that they had been in the presence of a master in his art. Charcot's manner was always courteous and sympathetic. He was a man of many accomplishments, master of several languages, and widely cultured in the literature of his own and other lands.

While his scientific work was by no means limited in its range, he made one department particularly his own. In regard to diseases of the nervous system he was supreme, and may indeed be called the father of our knowledge of nervous diseases. It is almost impossible now to realize how little was known of the nervous system even a few years ago. The endless complications of the networks of nerves and spinal cord and brain had all to be worked out in health and in disease. We know how brilliantly this has been done, and how numerous diseases of the nervous system, formerly supposed to be fatal or hopeless, are now treated and cured as a matter of daily routine. In all the history of science there is no more wonderful chapter than the record of the recent advances of neurology, and it would be difficult to overestimate how much of it we owe to the work and to the influence of Charcot.

Within recent years Charcot largely devoted his attention to a study of those curious conditions now generally known as hypnotism. The subject is at once one of the most fascinating and one of the most difficult that has ever puzzled the brains of man. In one form or other it has been familiar from the earliest times, but chiefly as a convenient tool for the charlatan and the knave; and, in consequence, there are many good folks, both in the medical profession and out of it, who look askance upon the whole matter and on all who dabble therein. Prolonged and bitter controversies raged between the school of the Salpêtrière and its opponents, but all outside the medical profession will agree that it is highly desirable that the subject should be either finally discredited or established on a scientific basis. This is what Charcot endeavored to do, and he would be a bold man who would venture to predict the limitations of "psychological therapeutics." In any case, we owe a debt of gratitude to the man who was fearless enough to risk his reputation, and boldly crossed the threshold of the mystery.—*Chemist and Druggist*, Aug. 26, 1893.

The Physical Power of Mind.

It was said by Kant that a man need not sneeze against his will. We have no evidence as to how far he verified the proposition in his own person, but the expression has its significance, showing us that Kant regarded the will as a sort of regulator, if not the absolute controlling power, in the individual Ego. Properly speaking, he regarded body and spirit as interdependent—inseparable. Mind and matter constituted in his eyes a unity in which the action of the one called forth the reaction of the other.

We have no intention of reopening here the old strife between materialism and idealism. The object of our introductory remarks is simply to present the subject in its highest aspect, where it naturally suggests the question: By what means is this interdependence between the physical and spiritual brought about? Turn and twist as we may, we can suggest no other medium than our nerves, those innumerable agents in equally innumerable labors. Every impression to which our body is subjected produces a local stimulus or excitation, which is at once telegraphed to the central organ of our spiritual being, the brain, by one of these active agents. The sensation arises into consciousness, and in such wise that we are able to locate the seat of stimulation; the central organ reacts, and, in the case of a painful shock, for example, messages go to the heart, which is violently excited, thereby influencing the whole circulation, possibly making the knees tremble. Now, what is terror? Certainly nothing bodily, but a mere mental condition, and yet it may be sufficient to exercise the most powerful influence over any of our organs, even to paralyze them. How this occurs we know no more than we know how consciousness originates. It presents, however, a sufficient illustration of the fact that a disturbed mental condition can operate prejudicially to our physical constitution. That sudden joy, under certain circumstances, may equally prostrate the physical powers, proves only that extremes may produce like consequences.

What does this teach us? This only, that the mind is a power in our physical constitution—as great a power, perhaps, as even the heart or the lungs, if not a greater. Its special media are our senses, which, receiving impressions of stimuli, transmit them to the central organ, where they engender characteristic mental conditions. How must the eye be exercised in mastering all the impressions that fall upon it from the outer world? According as they are beautiful or ugly, they impress our mind pleasantly or painfully, and by its reaction our bodies are similarly affected. In the one case we may be disposed to dance, in the other we may be incapable of even eating or drinking.

Similar effects may be produced through the organ of hearing. Word and tone are capable of generating the most powerful emotions. Music especially exercises an immeasurable influence on even the simplest minds. Lively music impels people irresistibly to dance. The power is purely spiritual, but it reacts in the highest degree upon the body.

So, too, with the spoken word. Is it not wonderful how we are moved to anger or sympathy, how we may be exhilarated or depressed, by the mere modulation of another's voice, or by the narration of tales of humor, of pathos, or of horror? Of course ideas are awakened, but what power is there in ideas to make the hair stand on end, or the sweat ooze from the pores of the skin, or how can a thought make us dizzy? It is no satisfactory explanation to say that the dizziness was caused by a flow of blood to the head. What is it which makes so many people giddy when they stand on the edge of a precipice? Simply the idea of falling over. Every one familiar with the sensation knows that it feels as if his brains were the seat of confused emotions, which entirely upset his equanimity. But what causes the sensation? I have seen a mountain maid stand on the outer edge of the witches' dancing-place in the Hartz, and let her eye wander calmly down the dark valley below, and I saw the same girl later overcome with dizziness while crossing a bridge, below which the water seethed and whirled tumultuously. A strong will can do much, if not everything, to overcome this sensation of giddiness, which, if it arises, excludes all the more pleasurable ideas which the scene is equally capable of awakening.

The most powerful influence on our lives is unquestionably love; but this, too, is based on stimulus-sensations precisely as the poet says: "Thy beautiful figure excites me." It originates in the pleasurable emotions which each inspires in the other; but what fateful revolutions, spiritual and physical, may it not work, whether in a joyous or tragical direction! It is the most spiritual of human sentiments, yet what devastation may an unfortunate love involve!

It is easy to say that it is the nervous system whose molecules vibrate at their highest ratio in tranquil love, but are arrested and confused in their vibrations when the sentiment is disturbed. But how is that brought about? Is there really a boundary between the physical and the spiritual in our being? In this realm we grope in darkness, incapable of recognizing anything but phenomena, but the more thoroughly we study the subject the clearer appear the evidences for the conclusion that body and soul are one.

If we pass from love to hate, we have a new series of occurrences which operate powerfully on our physical nature. From jealousy to vengeance the road is straight, and all that lies between is blind passion. Why do we say blind? Because that is the actual condition which the mental life manifests. Not that the eye has lost the faculty of seeing, but that judgment, love, and humanity are overwhelmed by passion. As is well known to the medical profession, such mental excitations generate physical ailments, resulting, in some cases, even in madness. No one knows so well as the doctor for the insane how intimate is the relation between insanity and physical disease of the brain. To a doctor for the insane the idea of soul and body existing apart is simply ridiculous; but he would probably listen respectfully to the suggestion that the soul is not one with the brain only, but with the whole body.

Passing now to the realm of hypnotism, we find one mind influencing another, and through it the associated organism, by purely physical agencies. This, perhaps, affords the key to the tendency to yawn, laugh, cry, etc., in sympathy with others.

We must conclude, then, that body and soul constitute a unity, in which the healthy activity of each is essential to the healthy activity of man himself. For a healthy enjoyment of life it is necessary to exercise the mental powers to a normal extent, and maintain a rigid control over the passions. Mental and physical health and vigor call for activity, apportionment of time, regularity of life, education of the will power for the attainable and natural, and the pursuit of truth, goodness, and beauty.—Dr. Karl Muller in *Die Natur*. (*Literary Digest*).

Percentage the Basis of Successful Business.

A great many merchants seem to think that success in business depends almost wholly on the volume of business done

They look upon a large volume of business as the acme of success, and to a great extent lose sight of percentages altogether—which are really the base of all successful business.

To be successful as a merchant in building up a prosperous and paying business, a reasonable percentage of profit must be made over and above the cost of goods and the actual expenses of conducting their business.

This principle once established, then of course the volume of business has everything to do with the amount of the net profit.

Observation, however, leads us to the conclusion that too little attention is paid to this matter of percentages in business transactions by Western merchants, and that this fact is one of the most fruitful sources of failure that exist in the mercantile trade.

Of course, every man who engages in any line of mercantile trade does so with the idea of making a profit from the capital he invests, but statistics show that the number of men who fail in business very largely exceeds the number of those who succeed. In fact, it is asserted upon reliable experience that only five per cent. of those who engage in mercantile pursuits make a success of their business, while the other ninety-five per cent. are unsuccessful if not absolute failures.

Why is this? Many reasons have been assigned, and many circumstances and conditions combine to bring about this wide difference between success and failure in retailing merchandise. Of course a very large percentage of failures is attributed, and rightly too, to the injudicious and indiscriminate grant of credits, and lack of ability to make collections.

But we believe that closely allied to this, and in fact an equal partner in the disaster, should justly be classed the neglect of business men to figure percentage upon their business transactions.

How many merchants in this or other States can tell to anything like a certainty what per cent. the cost of goods, what per cent. their clerk hire, their insurance, their rent, their losses through bad accounts, is to the total volume of business done? We will venture the assertion that not one merchant in a hundred could give such information, while many of them could not tell you the net profit or loss upon their capital invested in any one year.

The large majority of merchants base their per cent. of profits upon the actual cost of their merchandise, simply guessing at the percentage that should be added to cover the expense of conducting and maintaining their business, and almost invariably this expense is guessed too low, and in a short time they find failure staring them in the face, all because they have failed to figure a proper percentage for the cost of doing business.

Too much importance is attached to the volume of business, and many a merchant fails simply because his desire to attain a large volume of trade has led him to sacrifice needed and legitimate profits in hopes of increasing his sales.

The haphazard and guesswork methods of doing business may occasionally win, but there are ninety-nine failures to one success.

The retail merchant should by all means put more system into his business, and reduce it down to a basis of percentages.—*Nebraska Trade Journal.*

The Next N. W. D. A. President.

At the proposed meeting of this body on the 9th of next month, there will come up the question of the selection of proper officers for the following year. The few weeks intervening before the meeting give time for a careful consideration of this important question. In all bodies having executive duties to perform, it is important that the active officers be selected with the sole view of the proper transaction of these duties. It is too often the case that these offices are considered as positions of honor primarily, and sometimes incumbents are selected who are not best suited for the work laid upon them. We believe that the affairs of the N. W. D. A. have been wisely administered in the past, and there is, as yet, no great reason to fear that they will not be in the future; still there has been evident of late years a decided tendency toward selecting officers as a matter of compliment and, though no great mistake has yet been made, it is possible a disastrous result would follow the continuance of this policy.

The president of a body of this nature is looked upon as its spokesman, its accredited representative, and he should be selected with a view to its proper representation in all completeness and dignity. He should be chosen regardless of the next place of meeting, not as a compliment to him, his firm, or his city, but in the one idea that he is the man best suited to preside over the deliberations of the body he governs. He should be a man of broad judgment, of unbiased views, or, at least, capable of sinking his private prejudices, just in his judgments, quick and impartial in his rulings, and one in whom the members will always find the desire to administer the affairs of the Association to the best advantage of the body as a whole, even though, perhaps, such administration shall, at times, run contrary to the desires of individual members. Added to all these qualifications he must, of necessity, be a good parliamentarian, as nothing is so annoying and yet at the same time so ridiculous as a presiding officer who does not know whether the amendment or the original motion should be first put to vote. He should not be selected for his past services to the Association alone, for a hard worker in the ranks is not always fitted to be a leader, nor is the fluent speaker upon the floor always sure to be a just judge, for as the presiding officer, his individual prejudices may come strongly to light and prevent impartial decision. The N. W. D. A. has had good men for presidents, and will always have good men for presidents, as its membership is composed of good men, but all good men are not good presidents, and there are those in the Association who, perhaps, are better qualified for such positions than any who have yet held it. At the next election of officers let a man be selected to act as president in all the word implies, and not with the idea of complimenting a town or a man by the choice.—*Pharmaceutical Era*, Sept. 1, 1893.

"Much Ado About Nothing."

This good old world has not made its annual cycle many times since the inhabitants of its civilized and enlightened portions were startled to an unusual degree by the announcement, from a once distinguished French scientist, that the unavailing search of Ponce De Leon for the fountain of perpetual youth need no longer be lamented, and that, although he had not discovered this much-to-be-desired spring in which to rejuvenate his aged members, the end could be accomplished by the injection of testicular extracts. This announcement took the world by storm. The secular and scientific publications were full of it, and a corner on the "lamb-fry" market was a natural consequence—mountain oysters going up away out of sight. Among the notables of the American continent who was early to place himself upon record was an ex-surgeon-general of the United States Army (retired list). Some of our leading houses engaged in the manufacture of pharmaceutical products placed their chemists and crucibles at active work in making, manufacturing, and bottling spermine, testicle juice, etc. Scarcely a village with any metropolitan pretensions whatever, that did not have one or more progressive medical men who hastened to avail themselves of a means by which their elderly patrons could bid defiance to the lapse of years and the stride of time.

Well, well, we don't hear much of it now. The clinical reports appearing quite frequently at that day seem somewhat ludicrous now, though so short a time has rolled by. Among the first to embrace and the last to abandon the senile delusion of the garrulous Gaul was Dr. Wm. A. Hammond, formerly of the United States Army, later of New York City, and now of Washington, D.C. In an early number of the *New York Medical Journal* of this good year, 1893, he had quite an elaborate paper on the preparation and therapeutical properties of "Certain Organic Extracts." Messrs. Parke, Davis & Co., of Detroit, Mich., who have made numerous and commendable efforts to aid the practitioner of medicine, by means of their elaborate and complete appliances for manufacturing pharmaceutical products, and who have ever been in the van in introducing new drugs and their compounds, immediately, or some time thereafter, commenced the manufacture of "Desiccated Thyroids," for the cure of myxœdema, and "Cerebrin," "prepared" (as stated in their advertisement in this and other journals) "after the formula of Dr. William A. Hammond. Put up in glass-stoppered ounce vials." Also stating in parenthesis as follows: ["While Dr. Hammond has recommended maceration of the brain for six months, we have modified his method in such manner that we are enabled to thoroughly extract the crude material in as many days"].

Well, there seems to be nothing wrong in this. In fact, the abbreviation of time in manufacturing the product would seem preferable—at least so to a man up a tree. Extract of brains, as well as testicle juice, would certainly be the better for freshness. As for making use of the formula, or an improvement thereon, the same not having been at that time copyrighted, patented, or otherwise protected, or even saying that their preparation was prepared after the formula of Dr. H., or a modification of the same, we certainly think they had a right so to do, just as much as Dr. Hammond had the right, or assumed the right, to use the testicle juice of poor old Brown-Séquard, some years since. At least, if I had felt like wasting my time in such ridiculous nonsense, or any other reader of the *New York Medical Journal* of January last, or a reader of any other journal that may have copied the original, I would not have thought that there would have been an occasion for the subsequent display of wrath and ire on the part of the one and only Hammond. He gave his lucubrations to the public in a medical journal, issued for the public, and if one or many had seen proper to avail themselves of its real (?) or assumed benefits—why—yes, why this "tempest in a teapot?" Why this charge of fraud—aye, of *stealing* enunciated against a so well-known house, whose members are honorable gentlemen? Why this threat of legal proceedings? Yes, why all this thusness?

Possibly Dr. Hammond may have reasonable grounds for a law-suit, but will he not have to show a real value of the article at issue? If he claims damages to his good name and reputation, was he not the first to so impair it?

But, mayhap, there is a "*raison d'être*," in verity "a nigger in the wood-pile," an unquestioned feline in the meal-tub. Has Dr. Hammond copyrighted or patented his "Certain Organic Extracts?" Has he embraced Cerebrin as well as Cerebrine; Testin as well as Testine; Musculin as well as Musculine? Or, has he a proprietary right, or a silent-partnership in some other pharmaceutical house than the well known establishment at Detroit?

In giving expression to an opinion of the whole matter, we can only state that "the game is not worth the candle." In conclusion, our readers will find in our advertising pages, well worth reading, "*An Apology*," inserted by order of the well known pharmaceutical chemists, Messrs. Parke, Davis & Co., of Detroit, Mich.—*Southern Practitioner*, August, 1893.

The Therapeutic Value of the Preparations of Myrtilli.—To the many opinions expressed against the therapeutic value of the preparations made from parts of *Vaccinium myrtillus*, Prof. Kethi of Budapest adds his opinion, which he publishes in the *Orvosi Hetilap*, No. 18. Having treated five cases of diabetes mellitus with myrtillus pills, of which each contained 0 12 gramme of the extract of the leaves, he says: "Myrtillus is an innocent remedy, which even after long use causes no disagreeable effects; the same does not reduce the amount of sugar of urine, at least not in severe cases; the general condition of a diabetic patient is not improved; myrtillus possesses no therapeutic value—at least, not in severe cases."—*Pharm. Zeitung*, July 15, 1893.

Haschisch.—In India this name is applied to the flowering tops of the Indian hemp, and, by extension, to the hemp itself.

It is now known that the *Cannabis Indica* of India is identical with the *Cannabis Sativa* of our countries, and that the only difference, from a therapeutic point of view, lies in the greater activity of the first-named, due probably to climate and environment in savage state. The same effects may be obtained from the hemp of our regions by employing five or six times the dose.

The products derived by the Orientals from haschisch are numerous. Some smoke the *Ganjah*, that is to say, simply the dried plant; others drink the *Bang*, infusion prepared from the green seeds; others employ the *Charros* or *Churrus*, the resin extracted from the plant by an essentially primitive process. Thus, in Nepaul, at the time of flowering, men traverse the fields of hemp, with long leather soles attached to their feet, they being likewise clad in leather garments. The resinous exudate which clings to the garments and to the thongs is later removed with a knife, moulded into little spheres or pills, and these pills are smoked by the natives either alone or mixed with tobacco.

The *Ganzar* is prepared in Persia by triturating the green parts of the plant, and by crushing them through a coarse cloth. In other regions, mixtures are prepared, more or less complex, of which the hemp forms the base: the *Mapouchari* of Cairo, the *Majoon* of Calcutta. The *Dawamesk*, which is consumed particularly in Arabia, is a species of confection made from the leaves and flowers of the hemp, crushed and boiled in fresh butter and honey, to which nutmeg and fragrant essences are added.

The passion for haschisch is shared in the Orient by several millions of human beings, where it prevails side by side with the opium habit. In Cairo the *Haschahs* or haschisch-smokers indulge in their vice in special cafés—the so-called *mascheschels*, which are very much like the opium-joints of Indo-China.

Haschisch has been the subject of numerous physiological and chemical investigations. It does not seem, however, that scientists have reached positive conclusions on any single point.

Courtive isolated from the hemp a brown acrid resin—the cannabine, identical with that subsequently discovered by Gastinel under the name of haschischine. It is insoluble in water and the alkalies, soluble in alcohol, ether and the oils. Anyone, moreover, can obtain from the Indian hemp by distillation a light odoriferous oil, the vapors of which when inhaled cause giddiness. It contains a slightly crystallizable acid and a hydrocarbon, connalene. Richter in turn isolated another substance from the hemp, the cannabienne; Hay obtained an alkaloid from it, the tetano-cannabine, very similar to strychnine in its physiological action. Finally, Preobroschensky obtained from the haschisch a notable proportion of nicotine, which may be explained more readily than the author may have supposed, for it often happens that the haschisch in powder, intended for smoking, is ere selling mixed with powdered tobacco.

All these substances, one after another, have passed for the essential active principle of haschisch. The haschischine and the essence have yielded in the experiments most of the physiological effects of the drug.—*Revue de Thérapeutique.*

The Technique and Prescription of Salves.—Our German colleagues seem to be following with a certain measure of interest the discussion which was prompted by a communication recently published by Dr. Edmund Stern, a specialist in diseases of the eye and skin, at Mannheim, on the subject of salves and their production. The Doctor maintained that the prescribing physician should specify with precision the admixtures to be employed in salve-making, and evidently his views were resented by some pharmaceutical critic. We reproduce below his rejoinder to the animadversions of his critic, as published in the *Pharmaceutische Zeitung:*

In No. 7 of the *Therap. Monatshefte*, I appealed to my medical readers, not to pharmacists, to devote attention to the production of salves, not for the technique of the operation, which to a medical man is a matter of indifference, but rather on account of the connection existing between this technique and therapeutic considerations. In other fields, there is an absence of such reciprocal relation. How a surgical scissors is manufactured matters little to us physicians, if it will only cut. But it is different with salves, the action of which depends upon their manufacture or technique. Here it is not only the privilege but the duty of the physician "to concern himself with the affairs of the apothecary." A criticism of my views in the *Pharm. Zeitung* seems intended to controvert my statements in this respect.

I showed that water, alcohol, oil, were by no means innocent admixtures. For in therapeutics, and especially in external therapy, there is nothing innocent, indifferent, like the "neutral behavior" of ethics. Everything may prove material and noxious in certain contingencies, even water.

Accordingly I emphasized the principle: "The salve-base (powders, extracts, salts, liquids, melted substances) is always to be triturated directly with the body of the salve." I know very well that direct trituration is not practicable with either all powders or all extracts, salts, etc. With reference to this fact I at once qualified the statement and anticipated the exceptions by the words immediately following: "If the physician desires water, alcohol, or oil to be employed for trituration, he should specify explicitly."

I chose this form of expression purposely. I might have said: "If direct trituration is technically impossible, the physician is to prescribe the necessary admixtures of water," etc. But that I could not say. For the rational physician, who must first look to therapeutic virtue and only then to pharmaceutical elegance, is often compelled to prescribe technically "impossible" salves—not in order to vex the apothecary, but to benefit the patient. Thus, for example, I employ salves containing high percentages of silver nitrate, manufactured by direct trituration. To be sure, they are sandy and "lumpy," but they act admirably. It makes a most material difference whether a given salve bears its base in solution or in suspension.

It would be difficult to express one's self more clearly. Moreover, at the close of my brief dissertation I added a series of formulæ intended to illustrate my "principle" in the case of a number of salves which in practice are the most important—and, among the latter, extract-salves are not to be classified. Instead of testing the correctness of these formulæ, the critic of the *Pharm. Zeitung* pitches into me with an imaginary Ungt. Bellad. and the prescription of another physician. And yet he erroneously directs the salve to be rubbed into the eyes, whereas everyone knows that it is to be applied to the temples. And even then it is without action.[*]

I protest against such a criticism, and disclaim the charge of insufficient information. Far from pretending to be a professional pharmacist—which no one can expect of a medical man—I yet hope that the apothecaries will receive my suggestions with some interest. Not technical instruction—that the apothecaries do not need—but a clear statement of what therapeutics demand of pharmaceutical technique, was the purpose of these lines.

UNIFORMITY IN PHARMACEUTICAL PREPARATIONS.[†]—Many things are essential in the preparation of a remedial agent, but there is one definite property which when applied to a class of preparations is most valuable—valuable because it covers so many good qualities as strength, odor, taste, color, and keeping properties. All these requirements are characteristic in any well-made preparation. And this most valuable property, applied to the manufacture of medicines, is uniformity. When applied to single preparations, this would mean that no matter how many times a medicine is manufactured, its properties must never vary. By this requirement it can never lose its identity. No medicine can have too many proofs as to its character and name. Should the label become soiled or removed, we should have reliable proofs to identify it. This is necessary to retain the confidence of our customers; especially is this so in the present day, when so many people are changing residences and places of trading.

The public are learning to call for medicines which heretofore have been prescribed only by physicians, and they are very particular in regard to the appearance and taste of the remedies they buy, and the familiar saying of "just the same" or "just as good" is not conclusive evidence to them that such is the case. What seems best to me may not appear so to others, though difference in opinion has many times brought out facts.

The general appearance and action of the solid preparations are uniform, and of the salts and solid drugs and medicines I will make no remarks; though adulterations are too common, they are not easily detected, so look out for epsom salt in menthol crystals. But the liquid preparations manufactured in our own laboratories are not so easily masked but what any ordinary person can detect a departure from the usual formula in many instances, especially when color, odor, and taste are not uniform. But there are other reasons why uniformity should be practiced, the most essential being the strength of the remedy. If we do not use great care in their manufacture, we are liable to have incompatible prescriptions when the prescriber is not at fault.

If we do not use the formula of the Pharmacopœia, we cannot hope for uniformity in medicines, and what better or surer guides can we have than the acknowledged "book of the pharmacist?" It is to us the same as the law books are to the legal profession. But let us see if we have any reason to think we are departing from our official guides—for instance, in the tincture of opium: It is very essential that this important tincture be uniform in strength. The Pharmacopœia states that powdered opium should be used. I believe, as a rule, the gum is used in any state most convenient, and generally gum opium is very moist. No allowance is made for moisture in weighing out the quantity, so that it may easily be one-fourth water instead of all opium. This is generally macerated three, four, or even seven days in water, or in alcohol and water, or made at once by the aid of heat. So it must necessarily follow that tincture of opium is not of uniform strength, and while there is not any great danger of overdoses in one locality, there might be serious trouble in another where the U. S. P. tincture is dispensed.

There is much dissatisfaction expressed among customers in different localities in regard to tincture of camphor. The general complaint is that the tincture has not sufficient strength. How do we make tincture of camphor—do we use two ounces of gum to the pint of alcohol, or one to one-and-a-half ounces to the pint of "strongy diluted" alcohol, or do we make it according to the official formula? No wonder customers complain; and do we save any money or make any more regular customers by this loose method of manufacture?

Will your spirit of nitrous ether stand the test for NO gas? Can you afford to retail some of the sweet spirit of nitre for 75 cents per pint? If so, why? I am sure it cannot be up to the official strength. Much of the sweet spirit of nitre is so weak that an overdose is not feared. The little bottle in the prescription case labeled "Spiritus Æther Nitrosi U. S. P." (used for special purposes) tells the tale.

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[*] Dr. Stern seems to forget that—quite aside from his own formulæ—he is counseling all other physicians to specify in detail on their prescriptions the method of preparation. This accordingly applies to those physicians who do not share Dr. Stern's opinion respecting the efficacy of eye-salves containing extract of belladonna. That the pharmaceutical knowledge of many physicians is inferior to that of Dr. Stern, has been conceded. It must be questioned whether a physician can know in every case what admixtures or technical manipulations are needful.

[†] Read by W. S. Amos at the Wichita meeting of the Kansas Pharmaceutical Association.

The same with Hoffman's anodyne, and essence of peppermint and many other medicines, which should be properly made.

But the least uniform preparations are the elixirs. Scarcely 10 per cent. of these are made according to the National Formulary. They have no especial characteristics as to color, taste, odor, or strength. They are made by the most convenient formulas and not in a skillful manner. Scarcely any two stores sell the elixir of bromide of potassium having the same characteristics. It may not make any particular difference in the medicinal effects to have elixirs made according to methods other than those of the National Formulary, but it puzzles the customer and makes him suspicious; besides, the National Formulary is about the only method we can use to secure uniformity. It is prepared with the utmost care, and is a fit companion for the Pharmacopœia and deserves our attention; but I think we would be surprised to learn how few are the druggists who possess a National Formulary. They cost but 75 cents a copy, and for the sake of uniformity you who have none should obtain one the next time you order goods from your wholesale house. I think an elixir should be made with as much care and precision as any other preparation, yet many druggists seem to think they are not of much importance. Our National Formulary is very explicit in the mode of preparing elixirs and many other unofficial preparations. I have often thought that the reason we have so many proprietary medicines upon our shelves is partly because physicians think them more reliable and uniform in preparation than were the pharmacists to prepare the same prescriptions for them. But perhaps I am wrong, though I think we should discourage rather than encourage the use of proprietary medicines, in prescription work at least, for it is no more scientific for the pharmacist to dispense these medicines in prescriptions than it is for the physician to prescribe them. We make a mistake in using so many of these medicines. I cannot locate the fault exactly, as it seems to lie in more than one direction—conservation of forces, perhaps, brought to bear upon the physician or customers seeking something "good for what ails them." But it is a fact that these medicines have come into favor until they are as staple as the drugs upon which their virtue depends.

The gauge for medicines is their dose, and when a dose is once fixed for a tincture, elixir, or syrup it should not be easily changed. When doses are uniform the medicine itself should be always the same, and the doses can be relied upon to produce certain effects. It is confusing, and in some instances dangerous, to have fluid extracts varying in doses, but not many of our manufacturing houses are at fault in this respect.

The most important duty we have in the manufacture of pharmaceutical preparations is to have a uniform strength for each medicine. This is very essential to the standing of the profession. But if we follow the Pharmacopœia and National Formulary we will have no trouble in this respect. Will we do it?—*Druggists' Circular.*

We are informed that it costs the people of the United States each year, to be born, $25,000,000; to be married, $300,000,000; and to be buried, $75,000,000; while to get drunk the people pay $900,000,000. 'Tis also said that this bill for drunks is larger than the bill for all the bread and meat consumed by the same people.—*The American Lancet.*

PAPER STOCKINGS are said to be a new German invention. A Berlin shoe-trade journal observes that the stockings are made of a specially prepared impregnated paper stock, which has an extraordinary effect on perspiring feet. The moisture is absorbed by the paper as rapidly as it is formed, and the feet remain dry and warm, while the constant temperature maintained in the shoes is said to be the greatest preventive of colds.—*Canadian Druggist.*

THE TRIUMPH OF HYPNOTISM.—The Paris correspondent of *Truth* tells the following curious story concerning the death of Professor Charcot: "Charcot," says Mrs. Crawford, "scouted the old Greek idea that divine light often enters through the chinks of cracked brains. I wonder what he would have said could he have foreseen that, on the morning on which he was found dead, two of his 'subjects,' agitated and weeping, came from opposite wards into the matron's room. They had had fearful dreams. *He* was dead, for they dreamed they saw him a corpse. The housekeeper had that moment had by telegram the first news of the event." —*Chemist and Druggist.*

THE WAY TO REST.—To understand this, is of more importance than to know how to work. The latter can be learned easily; the former it takes years to learn, and some people never learn the art of resting. It is simply a change of scenes and activities. Loafing may not be resting. Sleeping is not always resting. Sitting-down for days with nothing to do, is not restful. A change is needed to bring into play a different set of faculties, and to turn the life into a new channel. The man who works hard, finds his best rest in playing hard. The man who is burdened with care, finds relief in something that is active, yet free from responsibility. Above all, keep good-natured, and don't abuse your best friend, the stomach.—*American Analyst.*

THE Georgia State Board of Pharmacy met in Rome August 9th. The full Board was present—John W. Goodwyn, chairman, S. C. Durban, Harry Sharp, George

F. Payne, and H. R. Slack, secretary. They examined a class of nineteen, out of which four failed. The following obtained pharmacist's license: J. P. Walker, Montezuma; Paul D. Reese, C. T. Jewis, Rome. Apothecary's licenses were given to W. J. Butts, Brunswick; Dr. B. C. Powell, Villa Rica; J. H. Ward, Griffin; Chas. A. Harris, Dawson; Chas. F. Taylor, Jr., Rome. The druggists were: C. E. Curtis, Griffin; G. J. Kelly, Flovilla; S. D. Little, La Grange; H. A. Reaves, Brunswick; Robert Tyler (col.), Macon; Dr. C. H. Tutt, Augusta; Walker Wright, Barnesville; and J. F. Wills, Columbus. The Board decided to raise the required percentage after next meeting from 60 to 65 per cent., and to restrict interstate licenses to those who average 70 per cent. and do not fall below 60 in any one branch. The complimentary license for best examination in this class was awarded to Joel P. Walker, of Montezuma, and the prize Sprague Medal for best examination was awarded to J. W. Goodwyn, Jr., of Macon. The Board adjourned to meet in Atlanta, subject to call of chairman. Governor Northen appointed S. C. Durban, of Augusta, to succeed himself on the Board. Drs. Slack and Payne represented the Board in the International Congress.

H. R. Slack, *Secretary.*

The Height of Man.—A French statistician has been studying the average heights of men at different periods of the world's history, and has reached some alarming conclusions.

The recorded facts extend over nearly three centuries. It is found that in 1610 the average height of men in Europe was nearly 6 feet 6 inches. In 1790 it was 5 feet 6 inches. In 1820 it was 5 feet 5 inches and a fraction. At the present time it is 5 feet 3¾ inches. It is easy to deduct from these figures a rate of regular and gradual decline in human stature, and then apply this, working backward and forward, to the past and to the future.

By this calculation it is determined that the stature of the first men attained the surprising average of 16 feet 9 inches. The race had already deteriorated in the days of Og, and Goliah was quite a degenerate offspring of the giants.

Coming down to later time, we find that at the beginning of our era the average height of man was 9 feet, and in the time of Charlemagne it was 8 feet 8 inches.

But the most astonishing result of this man's study comes from the application of the same law of diminution. It is conclusively shown that in 4000 A.D. the height of the average man will be but 15 inches, and in a few thousand years more the end of the world will come, for men will get so short that there will be nothing left of them.—*Buffalo Express.*

Bottle-Blowing by Machinery.—At the present time the eyes of the bottle-making world are also turned toward New Jersey. Their glance centres upon Woodbury, for in that quaint village the destiny of the bottle-blower may be said to be on trial. The Ashley bottle-making machine has been set in operation to see if it cannot do the work of human hands and lungs, and do it better and more economically. The machine was described before the British Association in 1889, when it was stated that bottles had been made by the machine, quite complete, which had successfully been subjected to an internal pressure of three hundred pounds to the square inch. The career of the machine in England, we believe, has been unfortunate. The advantages to be gained by the use of such a machine are much too solid to permit small obstacles to hinder its success.

The trial run at Woodbury has been fairly successful. The automatic principle has not been developed to the full extent in these machines, but it has been carried so far that one man and three boys (none of them necessarily skilled glass-blowers) can operate two machines, each of which is capable of turning out two bottles a minute. The machine does not gather the glass. One of the boys, a "gatherer," is specially detailed for that service. He feeds the molten "metal" to the machine, in which it is mechanically molded, the neck and the mouth formed, the interior blown by means of compressed air, and the finished bottle automatically delivered to a carrier which takes it to the annealing oven. There is undoubted room for improvement, both in the performance and capacity of the machines. But the important step has been taken, and bottles have really been made in this country by machinery.—*Popular Science Monthly.*

The Drug Clerk—A Great Difference between Him and Other Clerks.—It requires some nerve and the display of an acute presence of mind to enter a drug store and inquire for a particular thing and to take no other thing in place of it, says a writer in the *New York Herald.* Nobody understands better than the average drug clerk the feeble character of the human will, and nobody than he better appreciates his own superior position. If I should go into an eating-house and want frogs' legs and no frogs' legs were to be had, there, nothing would be thought of the circumstance if I should move on to some other place for what I wanted. Nobody would call out the rest of the force to stare at me. Nobody would tell me I really didn't mean frogs' legs, but wanted to get a wholly different thing. Nobody would sneeringly remark that they never heard of such a thing, that it wasn't down on the bill of fare printed for their house, and therefore frogs' legs were not in the market. Nobody would, when I had told them that I had seen frogs' legs in another restaurant, not far away, insinuate that I was either mistaken or was lying. Not at all. They would merely permit me to go away and hunt up my frogs' legs and enjoy them wherever I might find them.

The average drug clerk is a very different sort of individual to deal with. I have had them go so far as to relieve me from the strain of thinking to the extent of putting up something unasked for and by them pronounced just as good or better. And I never found that peculiar method of doing business in all my varied dealings with my other fellow-men. There is food for philosophical reflection in this. Now it is said that certain patent-medicine firms of a competitive character offer pecuniary inducements to dealers for pushing goods on the market, and this will account for some of the peculiarities of the business, but it will not account for all of them. Only the all-seeing One who graciously stands between us and morphine put up as seidlitz-powders can do that.

Dangerous Difference between Amorphous and Crystalline Digitaline and Aconitine.—The *Journal der Pharmacie von Elsass-Lothringen* points out a serious danger in prescribing digitaline and aconitine. In 1866 the only specimens of these alkaloids were the amorphous forms. Professor Dunstan, together with his pupils, has succeeded in emphatically showing the difference in toxic properties between crystallized (true) aconitine and the ordinary amorphous alkaloid, and urges the necessity of a recognition of this in the British Pharmacopœia. But whereas only the impure amorphous forms were known in 1866, the compilers of the Codex were safe in fixing the dose, generally administered in granules, at 1 milligramme. But the Codex of 1884 mentions amorphous digitaline, crystalline digitaline, and only crystalline aconitine; and yet the dose remains at 1 milligramme for the official granule. And in cases where the dose of a granule is not indicated by the prescriber, it is natural to expect that the official dose would be dispensed. If the therapeutic activity of the amorphous digitaline of the 1866 Codex be compared with that of 1884, it will be found that the latter, which is entirely soluble in chloroform, is nearly four times as strong as the former, and consists of 90 per cent. of true crystalline digitaline. In the case of aconitine, it is absolutely dangerous to use it in doses of 1 milligramme, if the crystalline alkaloid be employed. In fact, fatal cases have been known when this quantity has been administered. The importance of attention to these points cannot be overestimated.—*Druggists' Circular.*

A New Chemical Laboratory for Albion College, Albion, Mich.—Through the generosity of one of Michigan's liberal citizens, Albion College has been able to enter upon a scheme which has long been favorably considered, namely, to house each of its principal departments in a separate building that by its architecture and its peculiar fittings and appliances should best enable a given department to do its work to the very best advantage. For many years the Department of Chemistry has been very much overcrowded, so that while the range of instruction has been wider than that of most institutions of its grade, students have been crowded into the laboratory and been obliged to work at a great disadvantage. The first thought was a building costing $50,000 for the use of perhaps three lines of work—physics, biology, and chemistry.

Senator McMillan had promised to be one of eight or ten to erect such a building. Afterwards when approached with the thought that with half the sum suggested a building could be erected which should place the department in a home where the broadest academic instruction in that science could be given, he very generously directed the college authorities to proceed at once to make plans and erect the building at his expense.

The Professor of Chemistry made a tour of the principal college towns of the East in order to study the plans and equipment of the leading laboratories. After this an architect was chosen and plans were prepared. The contract was let, and the "McMillan Chemical Laboratory," as it now stands, nearly completed, is the result.

The cut of the exterior of the building will give a general idea of the structure. The general form that would best suit the requirements of the various branches of investigation was found to be a rectangle 52 by 88 feet. There are three stories and a basement, all abundantly lighted by high and broad windows. Entering by the massive stone archway which forms the entrances on either side, the visitor passes into the various special rooms and laboratories. The thought here has been to provide separate working and recitation rooms for each phase of chemical study, so that the student of every special line finds exclusion from all others, and appliances which are needed for the work which he has to do. There are, then, separate laboratories for qualitative, quantitative, and organic chemistry, other laboratories for research work, a combustion room, an assay room, a distillation room, balance room, dispensing rooms on every floor, private laboratories for the instructors, chemical museum, chemical club-room, etc.

In addition to the stock of chemical apparatus already in the possession of the college, a large invoice of appliances is now being received from Germany, and it is the purpose of the authorities to equip this department with all that is necessary to successfully prosecute researches in all the principal lines of chemical study. A thoroughly competent corps of instructors is being provided for. Work will begin at the beginning of the school year.

The building is erected upon scientific principles of construction, its heating, lighting, drainage, and ventilating systems being of the latest types. The structure is plain rather than ornate in appearance, though substantial and dignified, being built of brick, iron, and stone.

Prof. Delos Fall, secretary of the college, planned and superintended the construction of the building, and has entire charge of the department. The building is regarded by expert authorities as being the peer of any chemical laboratory in America.

Seven distinct courses are offered by the Department of Chemistry to students of Albion College. They are as follows and succeed each other in the order named: (1) General chemistry, (2) qualitative analysis, (3) advanced qualitative analysis, (4) advanced mineralogy, (5) organic chemistry, (6) quantitative chemistry, (7) organic synthesis. When the new laboratory is ready for use, a course in ultimate analysis will be offered.—*Detroit Evening News.*

Trade Supplement.

The BULLETIN *invites its advertisers and subscribers, and all connected with the drug trade, to send items of information, for these columns, concerning all new departures, products, and facts regarding the general and special trade interests of druggists.*

THE ST. REGIS INDIAN TRIBE are expert makers of fancy baskets. They are made in beautiful combinations of colors, using strong chemical dyes, and, being entirely hand-made, they are very strong and durable. In the assortment of styles are: Hampers for soiled linen, Scrap or Waste Paper, Covered and Open Sewing Baskets, etc.

At every holiday season the demand has been greater than the supply. Being very attractive and quite useful, they have proved to sell quicker than any other kinds of fancy baskets.

W. S. Tanner, Lawrence, Kas., the largest dealer in these Indian fancy-baskets, gives exclusive sale to one merchant in a city, and if you are handling fancy goods write him for his price-list, which contains interesting information about the Indians.

⁂

CANADA.

E. G. Swift, manager of the Canadian laboratory of Messrs. Parke, Davis & Co., Walkerville, Ont., was afforded the pleasure, through the courtesy of C. C. McGlashan, of meeting in his office, a few days ago, W. H. Dale, druggist, of Petrolia, Ont. A few days later he was complimented by a visit from Joseph E. Morrison, editor of the *Montreal Pharmaceutical Journal.* Mr. Swift will always be pleased to entertain the journalists and druggists of the Dominion, and hereby extends to them a cordial invitation to call upon him whenever they find it possible to visit Walkerville.

⁂

MINNESOTA.

Neil Currie, of Currie, who is interested in business at Currie and Tracy, has opened a fine pharmacy at the latter place. He has a wide acquaintance, and will without doubt get a good share of the business.

Gilbert Carlson has purchased O. J. Berg's pharmacy at Dawson.

Minneapolis:

Messrs. Melendy & Lyman, the old pioneer druggists of Nicollet avenue, are closing out their business, preparatory to retirement. S. W. Melendy has made a success of the drug business, and has been in the harness for thirty years and more; he will take the rest that he needs, and let some of the younger ones taste of the joys and sorrows of active Minneapolis business. It is to be hoped, however, that he will not drop out of the position he has so long filled in relation to the Minnesota State Pharmaceutical Association. This Association owes Mr. Melendy a debt of gratitude for the interest he has taken in its affairs, and for his go-ahead-ativeness.

Y. Laws, the old standby druggist at 2000 Riverside avenue, has connected himself with Gustave Stein, of this city, and has purchased the old Sherman drug stand at 424 Nicollet avenue. One would hardly recognize the place after the great improvements made by the new firm, Laws & Stein.

Sidney C. Mead, for some years at the prescription store of Robinson & Harter, on Western avenue and Twelfth street, and later at Redwing, this State, has accepted a position as assistant with J. P. Gilmore, at his Nicollet-avenue store.

O. J. Berg, for a number of years manager of Dr. Freidlander's prescription drug store, corner Fifth avenue south and Washington avenue, Minneapolis, but for the past year at Dawson, this State, has disposed of his interest at the latter place and purchased the entire stock, fixtures, and good will of the Doctor at the old stand, 501 Washington avenue south. Mr. B. is a rusher in the drug business, and has made a success of it; he will maintain the good name of 501 Washington avenue south.

⁂

NEW YORK.

I. Schulkind is owner of a well established pharmacy, located at 224 Avenue B., New York City. His store is fitted up in latest modern style, and a full line of elegant pharmaceuticals is on his shelves.

Max Zagat has an elegant pharmacy situated at Fiftieth street and Third avenue, also one at 147 Sands street, Brooklyn. Mr. Zagat dispenses only the best on his prescriptions, from a finely assorted stock of drugs. The courteous treatment accorded his patrons has won him the esteem of the laity in his neighborhood.

Herman Orlewitz, proprietor of one of the best pharmacies on the west side of Harlem, located at 127th street and Seventh avenue, is a popular and enterprising druggist. The store is managed on well established business principles—hence its success. Mr. Orlewitz fully merits the esteem of the trade, and as he has the confidence of the people of this section we bespeak for him continued success in the future.

⁂

SOUTH DAKOTA.

Some men are born lucky, and others take upon themselves a supply of that Western article called hustle and make themselves lucky. J. H. Onstad & Co., of Sioux Falls, have secured a large sale of their "Lumpy-Jaw Cure Capsules" for cattle. They are establishing agencies all over North and South Dakotas and Nebraska. They have "recommends" from very prominent men, and there is no doubt that within a short time these capsules will be as staple as Dakota No. 1 hard. Druggists in the West, especially in cattle districts, will do well to write them for terms.

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INDEX OF CONTENTS.

Editorial. PAGE
- National Wholesale Druggists' Association—Nineteenth Annual Session, at Hotel Cadillac, Detroit, Mich. 433
- Practical Observations 436
- Abstruse Science and Industrial Development 436
- "Legislation in Pharmacy" 437
- An Abuse of Journalism 438

Original Articles.

PRACTICAL PHARMACY.
- Sulphuric Acid. By Thomas Warwick 439
- Is it Possible to Produce Fluid Extracts of Such a Strength that They Can be Diluted with a Proper Menstruum to Make Standard Tinctures? By Dr. R. L. Tye 441

CHEMISTRY.
- A Short Course in Pharmaceutical Testing. By L. E. Sayre, Ph.G. 445
- Melting-Point of Cocaine Salts. By John M. Francis 446
- Examination of Commercial Tincture of Iodine. By F. H. Nickerson. 447
- The Purity of Chloral Hydrate as Found in the Markets of Michigan. By F. Faber 448

BOTANY AND MATERIA MEDICA.
- The Production of and Trade in Camphor in the East, By P. L. Simmonds, F.L.S 448

Nut Cracking 451

Correspondence.
- London Letter 454
- Berlin Letter 455
- New York Letter 457
- Chicago Letter 458
- John M. Maisch 458
- Dr. Hammond and the Medical Profession 460
- An Open Letter 460
- Glad of It 461
- Wanted—Back Numbers of the Bulletin of Pharmacy 461

Book Reviews 462
Facetiæ 463
Clippings and Translations 465
Pharmaceutical Progress 467
Notes and News 468
Publisher's Department 471

NATIONAL WHOLESALE DRUGGISTS' ASSOCIATION—NINETEENTH ANNUAL SESSION, AT HOTEL CADILLAC, DETROIT, MICH.

The nineteenth annual session of the National Wholesale Druggists' Association was called to order at 8.30 P.M., Oct. 9th, by President James E. Davis in a few well chosen remarks. Controller C. W. Moore was then introduced, who, on behalf of the Mayor and the citizens of Detroit, delivered the address of welcome.

In accordance with an established custom, the Association then entered upon the reception of the delegates from kindred associations. Credentials were received from several affiliated organizations. The Philadelphia Pharmaceutical Association was represented by J. H. Redsecker, of Lebanon, Pa., who responded to his name in a happy manner, and Mr. J. C. Eliel, of Minneapolis, replied. The Interstate League of the Retail Druggists of Massachusetts was represented by Mr. J. H. Canning. Mr. Cary Peter, of Louisville, Ky., replied to Mr. Canning's remarks, and, it is almost needless to say, acquitted himself in a short speech bristling with Southern wit.

Credentials were also received from the State Pharmaceutical Association of Virginia, from the Southern Association of Wholesale Druggists of New Orleans, from the New York State Pharmaceutical Association, and from the Colorado State Pharmaceutical Association.

Upon disposing of a few other matters, of minor importance, the first business session was brought to a close.

The second session was called to order at 10 o'clock Tuesday morning, Oct. 10th, when President James E. Davis delivered his annual address. He welcomed the Association to Detroit, and congratulated them upon the progress and success which has continued in the furtherance of the objects of the Association. Prominent amongst his suggestions were the following:

1. A change in the time of meeting, giving many reasons why the spring of the year, particularly June, would be a more favorable time to hold the annual meetings.

2. "The Association stands to-day without a peer in this country in its unity of purpose. In order, however, that the members may be better able to carry on the general committee work, it is necessary to have a larger income. The large outlay attending the success of the contract plan, and the expense of the Proprietary Committee, as well as that of the other committees, require that the income of the Association should be at least two or three times as large as at present. The dues should be increased from $10 to $25."

3. A secretary for the Proprietary Committee was recommended.

4. "The manner of electing the President of the Association is wrong. This power should be shifted to the entire Association, and the election of the President should be by secret ballot, and not by appointment."

The address next dealt with other matters of interest only to the Association itself, and in conclusion an appropriate tribute was paid to the memory of those members of the Association whom death had removed since the last meeting in Montreal. Prominent amongst the number are James Richardson, John F. Henry, and John L. Kirkland.

Next in order was the report of the Membership Committee. The report showed that the chairman had left no stone unturned in the furtherance of his duties. The long list of new members spoke for itself.

Mr. A. B. Merriam, the Secretary, then submitted his annual report. In 1880 the Association met in Detroit, and Mr. Merriam's report was a *résumé* of the important happenings from that date to the present.

The report of the Treasurer, Mr. S. M. Strong, proved the Association to be in a satisfactory financial condition. His report was referred to an auditing committee consisting of Mr. T. F. Main, Mr. H. Michaels, and Mr. Fox, who at a subsequent meeting reported same correct in every detail.

The first business of the afternoon session was the report of the Committee on Proprietary Goods, and of course in connection therewith the rebate plan was severely touched upon, showing that the plan was not only of vital importance to the wholesale druggists, but alike to the manufacturers, and last, but by no means least, to the retail pharmacists of this country. The "Detroit plan" was explained and urged upon the Association. This plan advises and insists upon the manufacturer selling at a discount only to those doing a strictly jobbing trade, the jobbers in turn to sell at uniform discounts to the retail trade, and the retail pharmacists by local organization to hold to the full marked retail prices. Thus the manufacturer will refuse the cutter, the jobber will not supply him, and therefore demoralization in prices may be brought to an end. It was then resolved that a definite form of plan for the sale of proprietary articles upon the basis of the "Detroit plan" should be arranged and submitted for the approval of the Proprietary Association.

Next in order was the report of the Legislation Committee. The committee opposed the Paddock bill. They deplored the fact that Congress had failed to pass an act to establish a uniform system of bankruptcy throughout the country. The Torrey and Anti-option bills received attention, and the Hall trademark, it was stated, is again to be introduced in Congress.

The following communication was sent to Senator James McMillan:

"The Nineteenth Annual National Wholesale Druggists' Association, now in session, respectfully petitions the Senate of the United States to repeal the purchase clause in the Sherman Act, believing that this action is essential to the financial prosperity of the country, and believing that such action should be antecedent to further discussion of future financial measures."

After the reading of numerous other reports, upon which space forbids us to enter in detail, the Association adjourned to meet at 10 o'clock Wednesday, Oct. 11th.

The third day's session was one of the most interesting of the entire meeting. The Committee upon the President's Address reported as follows concerning the suggestions enumerated above:

1. "The suggestion in connection with the change of the date of the meeting is not approved of."

2. "Association dues should be raised from $10 to $25."

3. "The need of a secretary for the Proprietary Committee is acknowledged, and therefore the President's suggestion in this connection approved of. This is the most important committee of the Association."

4. "We do not concur in the suggestion concerning the election of the President of this Association."

The Association by popular vote sustained the recommendations of the committee.

The contract plan was then introduced and discussed in detail, almost the entire morning being given up to this most important of all questions that annually come before the Association. As a result the following resolutions were adopted:

(1) *Resolved*, That the contract plan is the only practical method for the maintenance of fair and legitimate schedules of prices for proprietary articles.

(2) *Resolved*, That, in order to strengthen and render this plan more effective, it is respectfully recommended that proprietors accept orders for full quantities with rebate discount only

from regular houses recognized as belonging to the number who will faithfully observe the prices and conditions established by the manufacturer.

(3) *Resolved*, That, in the opinion of the joint committee, the forms for price-list herewith submitted embody, in the main, features which would tend to give stability to the plan, and they are commended to the favorable consideration of the proprietors. The committee consider it desirable that, so far as practicable, proprietors generally adopt uniform or similar price-lists.

(4) *Resolved*, That proprietors be requested to furnish to the chairman of the Committee on Proprietary Articles of the National Wholesale Druggists' Association, and the Committee on Trade of the Association of Manufacturers and Wholesale Dealers in Proprietary Articles, full lists of their customers, with the understanding that in cases where it is proven that contracts have been violated they shall refuse further supplies; also that in receiving orders from parties other than those upon the lists, their names shall be submitted to the same committee for approval before the filling of the order.

The third day's session closed with the election of officers as follows: Frank A. Faxon, Kansas City, President; J. C. Eliel, Minneapolis, First Vice-President; Thomas A. Main, New York, Second Vice-President; John B. Purcell, Richmond, Third Vice-President; John A. Cary, Indianapolis, Fourth Vice-President; E. C. Frisbie, Hartford, Conn., Fifth Vice-President; A. B. Merriam, Secretary; S. M. Strong, Treasurer. Board of Control—C. F. Weller, Omaha, chairman; J. A. Gilman, Boston; J. S. Moffitt, St. Louis; A. S. Brooks, Detroit; B. F. Fairchild, New York.

Thursday morning, Oct. 12th, at 10 o'clock, President Davis called the last session of the nineteenth convention to order, and first read a telegram which he had just received from New York announcing the death of Mr. John McKesson, Sr., member of the firm of McKesson & Robbins, and a prominent member of the Wholesale Druggists' Association. Appropriate action was immediately taken. Reports of various committees were then read—Committee on Adulteration, Committee on Insurance, etc., etc.—and the President then called for the transaction of miscellaneous business. The most important matter which developed under this heading was the motion introduced by Mr. C. F. Weller, which was to the effect that a committee be appointed to confer with manufacturers of pharmaceutical preparations to secure the adoption of a similar plan in reference to the sale of pharmaceutical products as now prevails in the case of proprietary medicines. The motion prevailed, and the following committee was appointed: C. F. Weller, J. S. Moffitt, and W. H. Schmidt. Under the head of miscellaneous business there always comes up the selection of the next place of meeting. Denver and New York were particularly clamorous for the honor of entertaining the twentieth convention of the Association. New York was selected.

The installation of new officers brought to a close one of the most successful meetings in the history of the Association. The rebate plan received strength such as it has never heretofore possessed, and on the whole each and every member left the hall with the assurance that exceptionally good results would accrue from the nineteenth annual convention.

The social features of the meeting were of a most pleasing and entertaining character. In the first place the weather could not have been more beautiful had it been made to order. The days were exceptionally warm for October, thus enabling the Association to appreciate fully what it is to live in close proximity to the Great Lakes upon the banks of such a stream as the Detroit River.

The yacht rides were particularly enjoyed, and especially so the trip through Lake St. Clair on board the steamer Promise.

The President's reception at the Detroit Club on Tuesday night was a most elaborate affair, as also were the receptions of Mr. and Mrs. F. K. Stearns and Mr. and Mrs. D. O. Haynes on Wednesday and Thursday evenings respectively.

The annual banquet at Hotel Cadillac on Thursday evening brought to a close the social features of the Association, and in no respect was there wanting anything to render the occasion a grand success. And just here we beg to state to the management of the Cadillac that the Entertainment Committee particularly requested us to assure them of their sincere appreciation of the many courtesies so kindly extended. The floral decorations were most artistic. The great mantel at the farther end of the dining-hall presented the appearance of a floral bower. In the centre appeared a red banner bearing the letters "N. W. D. A.," while below was an inscription, red on white, "They builded better than they knew." The menu was characteristic of Hotel Cadillac—'nuf said.

At 11 o'clock, Mr. Faxon, the newly elected President of the Association, entered, in an appropriate manner, upon his duties as toastmaster. The toasts, responded to each and all in a most pleasing style, were as follows:

"The National Wholesale Druggists' Association," James E. Davis, Detroit; "The Columbian Anniversary," Col. John Atkinson, Detroit; "Woman," Mr. Cary Peter, Louisville; "The Healing Art," Dr. F. W. Mann, Detroit; "Pharmacy and Pharmacists," W. H. Torbert, Iowa; "The Manufacturing Chemist," Theodore Weicker, New York; "The Law," John J. Enright, Detroit.

It was about 1 o'clock when the Mendelssohn Quartet, accompanied by Schremser's orchestra, struck up "My Country, 'Tis of Thee, Sweet Land of Liberty." In the song everyone of the 300 present joined, making the beautiful Cadillac hall ring as never before in its history.

Thus was brought to a close one of the most enjoyable and successful meetings since the foundation of the Association in 1876.

PRACTICAL OBSERVATIONS.

The adoption, in the U. S. P. 1890, of formulas prescribing solids by weight and liquids by measure, and the adjustment of the final product to a definite volume, will be regarded with gratification by pharmacists as well as physicians.

It is scarcely practicable for the nurse in the sick-room to administer liquid medicines by weight; while, on the other hand, the familiar teaspoonful and tablespoonful doses are very convenient.

By weighing solids and measuring liquids the busy physician can calculate dosage easily, and need not take into consideration the specific gravity of the liquid employed as a vehicle, at the bedside, where many matters deserving attention unfit his mind for dealing with such intricate and unnecessary problems.

Solids by weight and liquids by measure is also the best rule by which pharmaceutical preparations can be fixed so that physicians and pharmacists can readily calculate the amount of active drug represented by a given volume of a galenical preparation.

⁂

Speaking of weighing and measuring, we suppose that when we become accustomed to using metric weights and measures to the exclusion of the system now in vogue, we will look back and think of the complications with which we are at present confronted. We will remember that we used to have a Troy ounce of 480 grains; an Avoirdupois ounce of 437.5 grains; a United States fluidounce of 455.7 grains; and an Imperial fluidounce of 437.5 grains. We will remember that pharmacists always talked about Troy weight, when in fact they were constantly using Apothecaries' weight; that text-books and teachers were specifying "Troy grains," when in fact there was no other grain in use; that we had an Avoirdupois drachm equal to 27⅓ grains, and an Apothecaries' drachm equal to 60 grains, and that the old adage, "A pint is a pound the world around," was misleading.

⁂

Pharmacists who have large plate show windows should not take too much credit to themselves for the amount of attention their window displays attract. It is safe to assume that a large proportion of the passers-by, especially the ladies, are looking intently at their own reflection in the glass, and probably very few give the display a thought.

⁂

One of our young associates recently received a confidential letter offering to sell him $5,000 worth of superior counterfeit money for $450 cash; $40,000 worth for $2,000 cash, etc. The whole scheme is of course a transparent swindle which the experienced eye will penetrate at a glance, but for the benefit of our young readers who may happen to receive such communications we beg to advise that any association with such sharpers and their schemes is certain to bring nothing better than pecuniary loss and disgrace to the victims. Such literature should be promptly turned over to the postmaster or police department for investigation.

⁂

A dispensing pharmacist recently asked us to explain why, in dispensing a prescription calling for a combination of syrup hypophos. lime and soda, carbonate of ammonium, and syrup tolu, he obtained a thick milky compound when he used the syrup hypophos. lime and soda offered by a Western manufacturer, and the same formula yielded a clear, satisfactory mixture when the syrup hypophos. lime and soda made by an Eastern firm was employed.

Investigation revealed, as was expected, that the syrup which formed a clear mixture contained only a mere trace of hypophosphite of calcium. We therefore proceed to moralize to the effect that miscibility is not always evidence of superiority in pharmaceuticals.

⁂

By reason of its viscid nature, the transfer of castor oil from stock-containers to narrow-necked bottles furnished by customers is frequently attended with some annoyance. We recently observed that a dispensing pharmacist had taken measures to prevent this by converting an ordinary square castor-oil can into a container provided with two taps, which were fitted with conduits attenuated so as to penetrate and convey the oil safely through the neck of the bottle without danger of regurgitation. This container was placed upon a shelf, and, on a ledge underneath, a tray covered with a wire screen was designed to catch drippings, which are sold for lubricating and similar purposes.

In this connection we are prompted to mention the great advantage to be gained by keeping on hand a suitable supply of neatly-labeled bottles containing castor oil and glycerin in quantities frequently called for.

⁂

It is a common practice among physicians and pharmacists to employ, as a substitute for tinctures or fluid extracts of certain drugs, a corresponding amount of solid extract.

A case recently came under our attention in which solid extract belladonna was substituted for the fluid extract, without taking into consideration the fact that solid extract of belladonna is prepared from belladonna *leaves*, while fluid extract of belladonna is prepared from belladonna *root*.

ABSTRUSE SCIENCE AND INDUSTRIAL DEVELOPMENT.

The accomplished and talented editor of the *Pharmaceutische Rundschau* is not a member of the extensive community of mortals gifted with eyes that see not and ears that hear not. A good illustration of disciplined perception and sound deduction is presented by what he modestly terms a fragmentary report on the chemical products exhibited at the World's Fair. Let it be said in passing that no one can fall into a sorrier plight than the journalist who seeks to impart a vivid conception of an extensive display; and unless endowed with uncommon power of portrayal, his endeavor must needs remain within the limits of a bare and dreary catalogue of articles, less interesting and far less instructive than the crudest photograph. The reader who has actually seen the display turns away from the abortive description, uncontent; while he who has yet to see for himself, finds little to satisfy his curiosity in the naked enumeration. If any doubt on this score prevails in the mind of the reader, let him turn to any of the accounts and descriptions of special exhibits, attempted in professional journals, and see how much mental pabulum he can extract from this form of literature.

Dr. Hoffmann, in his account of the German chemical exhibit at the World's Fair, dwells with a fondness not unbecoming a son of the Fatherland on the striking evidences of superiority over all rival exhibits, manifested throughout the German display. Aside from the diversity and beautiful quality of the products presented, the German exhibitors have indeed achieved a unity and harmony of effect which contrasts unmistakably with the scattered, fragmentary form in which the other chemical displays have been arranged.

The question of Germany's supremacy in the manufacture of chemical products thus suggests itself naturally, and the Doctor accepts this supremacy without any of the qualifications or reservations which might be insisted on by the Frenchman or American. Certain it is that an extraordinary progress has been achieved in all branches of German industrial science during the past decade, and it is equally certain that, as stated by the *Rundschau*, the cause of this advance is to be sought in the enthusiasm, devotion and ardor with which theoretical and abstruse scientific investigation in all its manifold forms is prosecuted by German *savants*. Not cramped and hampered by narrow conceptions of immediate and money-making utility, the German scientist applies himself with rare disinterestedness to every branch of research, loving his science for its own sake, and following out his studies with little thought or care of practical profit. And yet this very disinterestedness has in the end proved to be a far-sighted and lucrative policy of enriching his fellow-men and his age. Unfortunately the student who in his laboratory develops new data and stimulates industrial enterprise, rarely reaps financial benefit for himself; but the fund of scientific truth which he contributes not seldom proves endowed with unexpected practical fertility and gives birth to industrial applications and numberless manufacturing enterprises. There could be no greater fallacy than the notion that abstruse scientific speculations, or theoretical studies, are devoid of that return by which a nation is enriched. Such questioning can always be silenced by pointing to Germany, where the manifold forms of industrial manufacture go hand in hand with disinterested research, and where apparently remote scientific discoveries have often proved weighty with beneficial and wealth-giving influence. The material resources of Germany are not such as to render the Fatherland by any means the richest member of the European family; yet so patent is the need of encouraging the study of theoretical science, so fertile in practical benefit have these investigations proved time and again, that money has been lavished without stint on the establishment and maintenance of State laboratories and similar institutions where shall be gathered together a fund of experiment and deduction—at once an honor to the State and a source of aid and suggestion to the intelligent manufacturer.

Not content with the rôle of a mere beneficiary, the manufacturer in turn finds means of adding his part to the fund of ascertained scientific truth, and thus contributes to enriching the parent science to which he owes so much. Germany, fortunately, stands not alone in this respect. Our own country can likewise declare that it is not wholly devoid of manufacturing houses which stimulate research and make their regular contributions to science.

Pursuing this intelligent, noble, and far-sighted policy, there is little fear that Germany's supremacy in chemical manufacture will soon be wrested from her. Not until other lands come to realize more vividly the need, and encourage more liberally the prosecution, of theoretical chemical research in its myriad forms, will they overtake a rival now so advanced in the lead.

"LEGISLATION IN PHARMACY."

If the American Pharmaceutical Association is sincere in its endeavors to promote the interests of pharmacy as a science, we would earnestly recommend that greater discrimination in the matter of papers be hereafter exercised. *The Pacific Drug Review* for August contains an article under the above caption, appended to which is the following explanatory note: "Paper presented to the American Pharmaceutical Association at their annual convention in Chicago, August 15, 1893, at the request of the president." It will only be necessary to quote a few paragraphs to illustrate the gist of this extraordinary effusion:

"The drug business is a trade not a profession. A man must learn the name and character of the material which he handles the same as he would learn to be a jeweler, a dry-goods dealer, and various other mercantile pursuits. He cannot learn it theoretically, but it must be learned by practical experience. No more skill is required in selling roots, barks, and herbs, then there is in selling diamonds or jewelry. Ninety per cent. of all the business carried on by druggists can be conducted by any intelligent man with ordinary business capacity. The best clerk you can get is an active, bright, business fellow, or, in other words, the best salesman. What you want is money. No college can give you a title which will support your family or take care of you in old age."

"Pharmacy is not a liberal art; it is hard work and drudgery. Men study law, medicine and divinity as an ornamental profession, not expecting to make it a profitable occupation. No man will ever take a Ph.G. diploma as an ornamental acquirement, and no legislative enactment will make people revere a professional title attached to a retail merchant."

"The tendency at the present day is to divert the drug business from a practical money-getting pursuit into a semi professional occupation—a mixture of chemistry and botany with a superficial knowledge of a great variety of subjects. Chemistry, in the drug business, is perhaps as important as for a carpenter to understand botany."

Happily, sentiments such as these will receive little notice at the hands of those who are sufficiently intelligent to comprehend pharmacy as the indispensable handmaiden of medicine and, therefore, quite as much a profession as the healing art.

However, it would be in better taste for an association having the promotion of pharmacy as its main object, to exclude papers such as the foregoing, which one might reasonably attribute to that period in the history of pharmacy when lizards' eyes and sparrows' tongues found their way over the apothecary's counter.

AN ABUSE OF JOURNALISM.

In surveying the field of modern pharmaceutical journalism, a first glance enables us to perceive the distinctions prevailing between the legitimate periodicals of various types. We observe here and there the handiwork of men who have gained distinction in scientific research; and uniting their authority as original workers with a wide erudition, a marked literary faculty, and a numerous following amongst their colleagues, they have been enabled to impart power and worth to the media which they have chosen for the regular communication of new ideas and valuable discoveries. Such a power in pharmaceutical journalism was the lamented Maisch; such are the few able men yet in active service, whom it would be invidious to mention by name.

Another class of journals attracts our notice by virtue of its purely modern features and its indication of conditions which are more or less recent. We refer to the few valuable pharmaceutical periodicals which, published avowedly in connection with large manufacturing enterprises, devote themselves to a presentation of practical methods, data and suggestions, drawing from the wealth of experience accumulated in establishments where every conceivable form of pharmaceutical is produced on a large scale and where able men are pursuing special and original researches in connection with their routine duties. It cannot be denied that publications of the latter type have been of eminent utility to the practical pharmacist and have proved creditable to their projectors.

Without dwelling on the peculiarities of yet another class of journals, which devote themselves more to the trade interests of pharmacists and to trade politics than to real pharmaceutical science and art, we may pass rapidly to a consideration of the mongrel and hybrid sheets which are at present infesting pharmacal journalism, and which in reality present naught save excerpts from the secular dailies or from occasional professional papers, advertisements of out-and-out nostrums, and venomous attacks upon reputable manufacturing houses. Such an alleged monthly journal—neither fish nor fowl—lies before us as we pen these lines. Printed upon a pink paper recalling with justice a notorious weekly which may not even be mentioned in polite society, it bears the pretentious device: "A Monthly Journal of Pharmacy in Opposition to Quackery in Pharmacy." In the upper corner is the name of its manufacturing parent—a name which has become a synonym for every form of counter-nostrum and non-secret piracy, beside which the sale and laudation of patent medicines becomes respectable and meritorious. "In Opposition to Quackery in Pharmacy!" Mark the phrase, and render to this pharmaceutical Pecksniff the tribute of admiration due to such sublime effrontery!

Of the eight pages composing this literary nondescript, after allowing for the space devoted to a feeble and verbose attack upon a firm whose brilliant and honorable success has been the envy and the despair of the whole tribe of non-secret pirates, the entire remaining matter is composed of extracts from pharmaceutical and secular journals, and of advertisements lauding various imitations of well known patented cough-cures. Thus the offspring and parent present the same familiar family features. The manufacturer in question never originated a thing in his life—his entire pharmaceutical career has been a long succession of imitations and appropriations; and the wretched journal to which he has given life now follows only too faithfully in his footsteps. As literature it is worthy of its progenitor, and will receive the same quantum of esteem from the intelligent pharmacist as has been accorded in the past to the nostrums which are indissolubly linked with his name.

As pitiable a waste of time and space as is any allusion to such journalistic rubbish, we cannot resist the temptation to expose its pretentious claims and its laughable poverty of brain and merit. Our task is done, and in dismissing an unworthy theme we counsel the "editor" of the poor, puny sheet to modify his motto. A more fitting device would be any one of the following:

"We are in it for the stuff!"
"What are we here for?"
"Science for revenue only!"

PRACTICAL PHARMACY.

SULPHURIC ACID.

BY THOMAS WARWICK.

Part 2.

We have already seen that sulphuric acid is liable to contain a certain amount of water, either purposely added to it by an unscrupulous dealer, or absorbed from the air through the hygroscopic properties of the acid. At first sight it may seem as though the addition of a small quantity of water to the acid could make no material difference in the quality of the latter, but all who have had experience in the soda-water business are unanimous in stating that the dilute acid is greatly inferior to the other. In the first place, it is much weaker, it requires more space in the acid-chamber, and it produces less gas (a curious fact, seeing that the pure acid reaches the marble-dust in a dilute condition). Moreover, the weak acid is especially liable to freeze—for, by reason of one of those curious physical laws which meet us at every turn, whereas pure commercial sulphuric acid of 66° Baumé will only freeze at fifteen degrees below zero, Fahrenheit (—26° Centigrade), the same acid when diluted, even though but little water is added, will freeze much more readily. Thus, if reduced to 63° or 64° Baumé (specific gravity 1.78), it will freeze even when the temperature is as high as 47° F. above zero, a temperature at which water, far from freezing, would be only cool.

This freezing (or, more properly speaking, crystallization, since beautiful rhombic prisms of the bihydrated acid are deposited) should be carefully guarded against, for once frozen the acid is exceedingly difficult to thaw out again, and there is great danger of the carboys being broken if the thawing takes place too rapidly, even if they have withstood the strain caused by the freezing.

In cases where sulphuric acid does freeze, of course no druggist would think for a moment of putting the carboy in a warm place to thaw out, as the results, while highly edifying, might unduly increase the number of angels. The best plan is either to wait for summer-time to come around and gradually thaw out the acid, or else to cautiously add a little water to it to redissolve the crystals. Of course prevention is better than cure, and every druggist should make it a point to buy acid of a reputable manufacturer, to test it when first opened, to keep it tightly closed when not in use in order to prevent its absorbing water from the atmosphere, and, in case it does become weak, to use it up before the temperature falls as low as 47° F.

Sulphuric acid is fortunately rarely found in nature, for it is too dangerous a substance to be allowed to run about loose. Still it occurs in small quantities underground, and is present in no mean amount in the atmosphere of our large cities, the sulphurous fumes that rise into the air being converted into this acid, and being the cause of a considerable amount of the unexplained corrosion that is continually taking place around us. But where sulphuric acid is found naturally in the greatest quantities is in the neighborhood of volcanoes. Thus in several rivers, among others in the Rio Vinacre of the South American Andes, sulphuric acid is present in large quantities. It has been calculated that, in the river mentioned, over thirty million pounds of this acid are carried off annually by the water—quite a neat amount, though nothing compared to the total quantity used yearly by our various manufacturers.

Sulphuric acid is prepared by the combination of sulphur, water, and three atoms of oxygen. The first two atoms of oxygen are easily obtained, for sulphur when burned unites with two atoms of oxygen, forming sulphurous acid (SO_2). The question then arises as to how to add the third atom of oxygen, and the problem is solved in a most ingenious manner. Nitric oxide (NO) has the power of absorbing oxygen from the atmosphere, and so forms nitrogen peroxide (NO_2). Now this nitrogen peroxide, when brought into contact with sulphurous acid and water, will give up its oxygen, so that the mixture will form sulphuric acid while the nitrogen peroxide will be reconverted into nitric oxide. In this way a small amount of nitric oxide, by continually taking on and giving off oxygen, can convert a large amount of sulphurous acid into sulphuric.

In practice, nitric acid is used at the start, and the reaction is then as follows:

$$2HNO_3+3SO_2+2H_2O = 3H_2SO_4+2NO.$$

A good draught is kept up so that after this preliminary process the transfer of oxygen by the nitrous oxide may take place with sufficient rapidity. The sulphurous acid is prepared either by heating the crude brimstone, or by heating iron pyrites (FeS_2) in a furnace. Sulphuric acid made by the former method is to be preferred, for that made from pyrites is very apt to contain arsenic. The acid when first manufactured is quite dilute, its specific gravity being only about 1.60. It is therefore evaporated in lead pans to about 1.70, and is then distilled in glass or platinum retorts to bring its specific gravity up to 1.84 (66.6° Baumé).

Sulphuric acid is so corrosive that there is scarcely a metal upon which it does not act. Even lead, upon which its action is comparatively slight, will be slowly but surely corroded by strong acid. This must not be lost sight of, especially by those who are obliged to manipulate the acid, and who are very apt to become careless after a time.

The first point to be insisted upon is that the floor of the room where the acid is kept and where the generator is charged, should be of earth, stone, cement, or some other substance upon which the acid has no action. If a wooden floor is used, it should be covered with lead in sheets, but a cement floor is the best of all and is not very expensive. The second point is that the operator should be very careful, in using the acid, not to let any drops fall upon the machinery, or, if they do fall, to wipe them off at once with a wet rag. This precaution, simple though it appears, is almost invariably overlooked; and in the large majority of generators I have seen, traces of corrosion of the iron body were plainly visible where the drops of acid had been allowed to fall. In several cases, too, so much acid had fallen around the bung through which the acid is poured, that the bung was almost completely separated from the machine, and I have heard of cases where the bung has become so loosened in this manner that it has been literally blown out by the pressure of gas inside. The owner is fortunate indeed when a leak occurs first, to call his attention to the dangerous state of affairs.

Commercial sulphuric acid being sold at the low rate of about 1½ cents per pound, it naturally follows that the manufacturers cannot, at this price, go to much expense in purifying it after it is produced. Moreover, for most purposes, the presence of a small amount of impurities is of no material consequence. For making soda-water, however, a high degree of purity is essential if good results are to be obtained; and as the brown color of commercial acid is due to the impurities it contains, it follows that for making soda-water an almost colorless acid should be used. It should not fume, should have as slight an odor as possible, and should not precipitate if mixed with an equal volume of water, neither should it give off orange vapors, but it should remain perfectly limpid. If heated in a porcelain container it should evaporate entirely without leaving any residue whatever.

The principal impurities found in sulphuric acid are arsenic, sulphurous acid, sulphate of lead, and nitric or hyponitric acids. The tests for these different substances are so familiar to the average druggist that it is needless to repeat them here. A variety of other impurities are also often present, due to carelessness in handling the acids. Thus it sometimes happens that a carboy, after containing nitric or muriatic acid, may be used by mistake for sulphuric acid, and may completely spoil the beverage. Again, nails, pieces of wood, etc., may find their way into the carboy (or what amounts to the same thing, into the generator), and by the action of the acid a certain amount of sulphuretted hydrogen will be formed, giving a nauseous taste and odor to the soda-water. Sometimes accidents will occur that not even the manufacturer can explain. I remember one case that came to my notice years some ago. One of our most prominent manufacturers of sulphuric acid, one who takes the greatest pains to produce the highest quality of commercial sulphuric acid obtainable, discovered, but somewhat late, that one of the batches he had sent out gave the soda-water a bad odor and taste. It was some time before he discovered his mistake, for his customers, knowing from experience the reliability of his acid, never once suspected it as the cause of the mischief, which they attributed to an unclean gas-washer or to any one of a hundred other causes. Finally, however, the true culprit was discovered, and several hundred carboys of the acid were sent back, while druggists all over the land suffered considerable worry and loss. Yet I do not believe it was ever clearly ascertained just what was the trouble with that batch of acid. But it is a safe plan for the druggist to test every carboy by sight and by smell, as well as by the acidometer, and if the acid fumes at all, or has the slightest muriatic or nitric odor, he should never employ it for making soda-water. There are many purposes for which an impure acid will answer admirably, but soda-water is not one of them.

Owing to the dangerous nature of sulphuric acid, transportation companies are exceedingly shy of taking it, and many lines refuse it altogether. Moreover, when they do take it, it is subject to such conditions and restrictions that a considerable delay in time is sure to elapse before the acid can reach its destination. Hence druggists should make it a point to order their acid considerably ahead of time, so as not to be left in the lurch if there is a delay of a month or two in finding a vessel that will carry it, or if it is lost in transportation, which is frequently the case—for the acid is carried on deck, and if a gale comes up it is all thrown overboard. As acid is only taken at owner's risk, and the freight must invariably be prepaid, the pharmacist loses both the acid and the expenses of transportation, and this is surely enough without the additional loss usually incurred by the delay in having a fresh lot forwarded.

Sulphuric acid is sometimes packed in large iron drums, but, as these are very unwieldy, carboys are preferred for the purpose. These carboys are stout glass vessels containing about fifteen gallons of acid, well packed in straw in a wooden case—at least in this country, although in England wicker-work baskets are preferred for the purpose. The carboys usually have triangular tops, but when shipped long distances the transportation companies require that they shall have square tops, and for these square tops manufacturers make an additional charge of about 25 cents. The druggist must in all cases pay also for the carboys themselves ($1.50 being the usual charge made). This is refunded if the carboy is returned—all freight charges, as usual, to be borne by the apothecary. It is therefore, as a rule, advisable for the druggist to keep his empty carboys until he has a lot of ten or twenty, and then return them all together. He thus saves a considerable portion of the expense. Moreover, he can usually make arrangements with the manufacturers to take back the carboys of other makers at the same price as their own, and so be able to ship all in one lot.

The difficulties of transportation have led manufacturers to try to devise some sort of solid sulphuric acid that could be conveniently shipped; but although the anhydrous sulphuric acid has been tried, and experiments have been made with a view to finding some inert substance that would soak up the liquid sulphuric acid and so bring it into a convenient shape for transportation, nothing satisfactory in this line has as yet been accomplished. Probably the future has something of the kind in store that will do away with a good part of the present risk and annoyance.

The carboys of sulphuric acid should not be opened until the acid is needed, and care should be taken to close the carboy again after the required quantity of acid has been taken out, in order to prevent any impurities from falling in. The acid should first be drawn out into an earthenware pitcher, and should afterwards be poured from this pitcher through a lead funnel into the generator body. A disc of lead, pierced with holes, should be placed in this funnel to prevent bits of glass or other hard substances from finding their way into the acid-chamber, as they would badly cut up the acid-valve. Many cases of leaky generators can be traced to a neglect of this simple precaution.

As to how to transfer the acid from the carboy to the pitcher, this is by no means an easy question to answer. The carboys weigh over two hundred pounds when full, are awkward to handle, and the dangers of carelessness in pouring out are manifold. It is therefore quite a problem to get the acid out. Many druggists adhere to the primitive method of tilting the carboy over a block of wood, but the progressive ones use a tilting-frame or pump of some sort. Unfortunately none of the devices at present on the market seems entirely satisfactory for the purpose. The tilting-stands are awkward to handle, and the pumps are slow and liable to sputter at the end. The acid-syphons are no better, for they require a cock of some sort, and no satisfactory cock for sulphuric acid has yet been devised. A great desideratum would be a cock that would be perfectly tight, easy to open and close, and yet not acted upon by the sulphuric acid. The man who discovers this will completely revolutionize the manufacture of soda-water machinery.

IS IT POSSIBLE TO PRODUCE FLUID EXTRACTS OF SUCH A STRENGTH THAT THEY CAN BE DILUTED WITH A PROPER MENSTRUUM TO MAKE STANDARD TINCTURES?*

BY DR. R. L. TYE.

The evolution of the fluid extracts was, at its beginning, looked on with scant favor by druggists, although medical men took to them at once.

Druggists found that the old-time apprentice, who could tackle a tincture, broke down on the fluid extract—there was more skill and more apparatus required than previously.

They themselves tried to meet the new state of affairs, and struggled manfully to keep pace with the times; but the fluid extract could not be so easily made on a small scale as the tincture, and hence one by one they fell out of the ranks of the would-be manufacturers.

The sequel was only a repetition of the old story of the stage horse trying to compete with the locomotive; of manual labor against scientific machinery; of homespun cloth and the labor involved in making it, against the elegant product of our factories.

They gradually yielded to what was found to be the more profitable method, and began buying their fluid extracts from those who made their production a special business.

In the preface to the 1840 issue of the U. S. Pharmacopœia we notice that the revision committee found it necessary to present a full page of argument in defense of "a new process of filtration called *displacement*," which was at that time first introduced into the Pharmacopœia as a substitute for the process of maceration, then commonly employed in the manufacture of tinctures from vegetable drugs.

This is important inasmuch as it shows that there existed at that time, amongst druggists, an opposition to the process of *percolation*, which has since proven so serviceable and reliable and has enabled us to attain the present standard of quality in fluid extracts.

Adjusting the present line of fluid extracts to a uniform standard of potency, by assay, was another step in the line of progress, and we need not be surprised to see it meet with the same conservative opposition as did the introduction of fluid extracts and percolation.

In the U. S. P. for 1850 there were enumerated seven fluid extracts, the first official recognition afforded to this important class of galenical preparations.

In the next revision, ten years later, the number was increased to twenty-five, in 1870 to forty-six, in 1880 the number reached seventy-nine, and many more will probably be added in the next revision.

These statistical facts afford strong evidence that fluid extracts really merit the favor with which they have been received by the profession.

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* Paper read before the Georgia Pharmaceutical Association, Rome, Ga., August 10, 1893.

The question of making fluid extracts sufficiently strong to permit of direct dilution for preparing tinctures can appear to have but one answer to the enlightened pharmacist, and that is that they *can be made.*

What is a fluid extract? The fluid extract, according to the U. S. P., is a permanently concentrated solution of the vegetable drug, one cubic centimeter representing the medicinal principles of one gramme of drug.

What are normal liquids? A liquid preparation of the drug, 1 c. c. representing 1 gramme of the medicinal principles of a drug of a *standard* quality. Simply standardized fluid extracts.

Now if 1 c. c. of a normal liquid, or a standardized fluid preparation, represents *one* gramme of standard drug, why is it not better to use this more convenient liquid form, than the drug which requires extra manipulation?

No one can deny the fact that a properly made fluid extract, that is, one made by re-percolation, represents the drug.

For illustration, take belladonna leaves, the average strength of which is 0.35 per cent. total alkaloids; a properly prepared fluid preparation or normal liquid, to be of the same strength as the drug, contains the same amount of total alkaloids.

If this is true with the alkaloidal drugs, reasoning by analogy, why are not fluid extracts of non-alkaloidal drugs of the same strength?

It is true that there have been in the past, and are some remaining, very poor fluid extracts in the market which would not produce a tincture of proper strength, and no doubt these have been the means of influencing some physicians, as well as pharmacists, against them.

The arguments presented here are based upon a standard fluid preparation, and the exact representation of this quality is found in the class known as normal liquids.

If anyone can claim that fluid extracts cannot be diluted down for tinctures, can they explain why the U. S. P. 1880 directs to make the following preparations from the respective fluid extracts: Syrup and wine of ipecac, syrup rhatany, lactucarium, blackberry, senega, and ginger?

In the coming U. S. P., 1890, you will find tincture nux vomica made from an assayed powdered extract, or practically the same process as the British Pharmacopœia has recommended since 1885.

If an assayed powdered extract of nux vomica represents the drug, is it not absurd to claim that a fluid extract does not? If the U. S. P. 1880 recommends to make some of the weaker preparations from fluid extracts, and the 1890 revision will direct that the tincture of nux vomica be made from powdered extract, why cannot more of the weaker preparations be made from the fluid extracts, if the diluent is miscible?

Mr. J. Lemberger (A. P. A. Proceedings, 1886, page 41), in an article upon this same subject, states that "from numerous trials made, not in the way of modifying the Pharmacopœia formulæ at all, but rather to accommodate the demand of a certain class of patrons, I find that, from an honestly prepared fluid extract—for example, fluid extract ergot, aconite root, or nux vomica—a wine or tincture can be prepared answering in all respects to and filling the requirements of the officinal tinctures. It is true the same therapeutic results will in most instances be attained by administering either one of the named preparations in a correspondingly smaller dose; and in the use of (say) tincture of aconite or any other of the powerful preparations sometimes used for outward application in liniments or washes, there can in my judgment no deterioration occur by such dilution. It has been frequently tried with fluid extracts of known purity and careful home manufacture."

Mr. Fred Lascar (*Druggists' Circular*, August, 1890, page 172), in an article on "Tinctures," states that "Many pharmacists now prepare their tinctures from fluid extracts in the market. It cannot be denied that this habit has been growing, and, to some extent, it must be admitted that our late Pharmacopœia has set the example in the preparation of pharmaceuticals from fluid extracts, such as arnica and gentian, and even tincture nux vomica from the alcoholic solid extract. While not at all recommending the method of preparing tinctures in this manner, it is impossible to gainsay the fact that our manufacturers now turn out fluid extracts far superior to those of former use, and that the fluid extracts as prepared now in most cases are nothing more nor less than concentrated tinctures, and especially so if prepared without the aid of heat. If these fluid extracts are only conscientiously prepared concentrated tinctures and are manufactured by reputable firms, they seem to be open to no greater objection than gelatin-coated comp. cathartic pills and kindred preparations."

Another strong point in favor of using fluid extracts in preference to the ground drug for making the tinctures is the comparative keeping qualities of the two.

There can be no question about the keeping qualities of the former, which have been tested again and again, but as to the latter every pharmacist well knows that exposed powdered drugs don't keep, as a rule.

During the past few years there has been a line of assayed powdered drugs introduced for making standard fluid extracts, tinctures, etc. The label gives the assay of the drug, the average strength of a standard drug, and then states the quantity to use, directing less of the drug if above standard, and *vice versa*, though I might say that of course we never expect them to be *below* standard, as they can regulate the work of nature in producing the drug.

Further, I will add for special information that the standard adopted for ground nux vomica is based upon *extractive* matter and not total alkaloids, more than likely intending to follow the absurd standard of the U. S. P. 1880.

Returning to the use of these drugs for production of various preparations, it is taken for granted that one can exhaust alike two different amounts of the same lot of drug by exactly the same menstruum, conditions, etc., etc. If one has an idea that he can do this, I can only say, "Go and try it—seeing is believing."

You are directed to use just sufficient of the drug to have the finished preparation contain a definite amount of active principle (accepting for argument that the drug is always exhausted); then why is it not practically the same thing if you are directed to use a definite amount of a liquid preparation, representing the same amount of drug, to make the finished preparation contain the same amount of active principle?

Certainly this liquid is much more convenient to use.

Now what arguments in favor of making tinctures from fluid extracts as compared with those made from crude drugs?

1st. They are more *reliable* made from fluid extracts than those from crude drugs, provided the fluid extract emanate from a reliable source, because the crude drugs from which the fluid extracts are made are in every instance assayed, and, furthermore, the fluid extracts are manufactured from drugs which have been comparatively freshly gathered and the source of which is authentic.

2d. They are *superior* to crude drugs, the active principles being in solution free from extraneous matter, and in compact form convenient for combination with any kind or proportion of menstruum or vehicle that the prescriber may choose to employ for each particular case.

On the other hand, tinctures prepared extemporaneously by druggists are generally made from crude drugs purchased through some jobbing house which may have had them on its shelves for years, and the authenticity or strength of which the ordinary druggist has no means of ascertaining.

The crude drug is subject to deterioration by influence of air, moisture, and often insects; while in fluid extracts the menstruum, if properly selected, is capable of retaining in permanent solution the active medicinal principles free from deleterious matter, and preserving them in a healthful state for an indefinite period.

The druggist may make his tinctures according to the most approved methods and with absolute correctness, yet the product may be entirely inert owing to the fact cited above.

3d. Tinctures prepared from fluid extracts are *cheapest*, for the reason that there is invariably a loss of alcohol in connection with the crude process which a retail druggist ordinarily uses to exhaust his drug. A manufacturer, on the other hand, makes a saving in this direction, and, taking also into consideration his superior advantages in the direction of the original crude drug purchases, is able to market his fluid extract cheaper than the druggist can possibly make it.

4th. Tinctures made from fluid extracts may be prepared extemporaneously in just such quantities as may be required to fill a certain prescription, and thus the druggist is assured that he is not carrying a line of pharmaceuticals which will almost invariably deteriorate to a more or less extent with age; fluid extracts, owing to their concentration, being ordinarily of a more stable character than tinctures.

For the same reason also they are a source of economy, saving him the investment, even though it be small, of alcohol used in the preparation of his tinctures.

Of course there are certain tinctures which he would use so frequently as to necessitate the carrying of stock even though they were made originally from the fluid extract, so that this advantage may be said to refer chiefly to the more rarely used tinctures.

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Should tinctures be prepared from fluid extracts?

This question is capable of presenting a variety of phases to observers viewing it from different standpoints, and with relation to it practical pharmacists are at present divided into three principal classes:

1st. Those who advocate the preparation of tinctures by dilution of fluid extracts.

2d. Those who discountenance this procedure and insist that tinctures be prepared from crude drugs.

3d. Those who regard tinctures as old-fashioned, clumsy preparations, which, if you will have them, may be prepared either way you like, but which should be virtually if not entirely superseded by the more concentrated and convenient fluid extracts.

Those who advocate the preparation of tinctures from fluid extracts claim many advantages, of which I recall the following:

That it is more convenient and no reasonable objection can be urged against it, since tinctures are simply more dilute solutions of the medicinal constituents of the drug than the corresponding fluid extract.

That tinctures of alkaloidal drugs, prepared by diluting the assayed fluid extracts of reputable manufacturing pharmacists, are more uniform in quality than those prepared from drugs purchased in the open market, since, as a rule, the retail pharmacist is either not qualified, or does not care to devote the time necessary, for determining the quality and genuineness of crude drugs by subjecting each parcel to a thorough examination as is customary with the large manufacturers.

That the information gained in this manner is of great importance, inasmuch as it has been repeatedly shown that the quality of drug usually met with in the open market is exceedingly variable. One sample of belladonna leaves often contains twice as much alkaloid as another sample presenting an equally fine appearance.

That in addition to this natural variation the retail pharmacist frequently obtains drugs in the comminuted state, in which form they are especially subject to adulteration and to deterioration from the action of the atmosphere and insects.

That the Pharmacopœia in its present issue authorizes the employment of fluid extracts in the manufacture of such preparation as wine ipecac, syrup krameria, syrup lactucarium, syrup rose, syrup rubus, syrup senega, syrup ginger, tincture ipecac and opium, etc., etc, and will probably extend the privilege in subsequent issues.

These specific claims are supplemented with the general argument that the unconscious common-sense of a multitude often hits upon a right idea even without its being formulated in the mind of the individual, and this aggregate common-sense has led to the making of tinctures from fluid extracts in spite of unwarranted remonstrance on the part of some few who see nothing but retrogression in any departure from pharmaceutical usage no matter how contrary to common sense the latter may be.

Representatives of the second class, who discountenance the preparation of tinctures from fluid extracts, appear to have contributed very little information on the subject to current literature, evidently believing that the advantages of their cause are self-evident, and seem to base their objection principally upon the fact that the Pharmacopœia does not authorize such procedure.

This basis, however, is apparently unhappily chosen in view of the fact that, as shown above, there is a tendency on the part of the Pharmacopœia to encourage the practice.

They also claim that the practice has been encouraged in the interest of large manufacturing concerns to increase the sale of their fluid extracts.

This also would seem to be a little weak, inasmuch as no one is *compelled* to buy fluid extracts unless he finds it to his interest to do so, and the fact that most of our successful pharmacists buy rather than make their fluid extracts shows at least that there are two sides to the question "of buying or making," and seems to indicate that it is quite as safe to invest confidence in the skill of reputable manufacturers whose laboratories are always open for inspection, as to invest it in the average apprentice to whom work of this character is usually allotted.

Even if the practice had been introduced by large manufacturers, this fact should rather recommend it to the favorable consideration of the profession, when we consider how liberally some of the more enterprising of these institutions have contributed to pharmaceutical progress.

There are undoubtedly a few instances in which the preparation of tinctures from fluid extracts is not to be recommended, but this fact should by no means serve to condemn the entire scheme, as it would be difficult to find any general rule having so broad an application without a single objectionable feature.

I believe with the third class mentioned—which, by the way is a growing one—that, with perhaps a very few exceptions, tinctures should not be made at all.

From the multitude of reasons which justify this belief I call to mind at this moment the following:

They are undesirable in that they have no uniform relation to the crude drug, either dosimetric or volumetric, and the memorizing of doses adds an unnecessary burden to the already encumbered minds of practicing physicians and pharmacists, and unnecessary perplexity for medical and pharmaceutical students.

The following will exhibit the variety in proportion of drug represented by the official tinctures:

Two represent 5 per cent. drug.
One represents 8 per cent. drug.
Twenty represent 10 per cent. drug.
Nine represent 15 per cent. drug.
Twenty-two represent 20 per cent. drug.
One represents 40 per cent. drug.
One represents 50 per cent. drug.

I have not undertaken to trace the origin of these various proportions of drugs represented, and am at a loss to account for their adoption and maintenance unless we ascribe them to accident or an attempt to conform to dosage, and this latter is certainly an unsatisfactory basis when we remember that the quantities of medicament administered must vary with the age and idiosyncrasies of the subject and with the customs of different periods.

Tinctures are not convenient for administration, as they usually afford a small proportion of drug in a large volume of alcohol, which may not only influence the action of the drug, but precludes their being combined with water or other vehicle unless an inordinately large dose is imbibed.

The practical observer will at once see that these facts which militate so strongly against the use of tinctures recommend fluid extracts as possessing unquestionable advantages, and physicians should not be slow to substitute them for the old-fashioned voluminous preparations.

In conclusion: Tinctures and wines, as a rule, have no advantages not also possessed by fluid extracts. They should, with perhaps a few exceptions, be eliminated from the pharmacopœial list.

The line of official fluid extracts should be widely increased, and should be adjusted to a uniform standard of quality by assay of the active medicinal constituents. With such provisions, the pharmacist could readily choose between "buying and making;" and the physician, knowing the dose of the crude drug, would also know the dose of the fluid extract, which could be substituted with gratifying results.

CHEMISTRY.

A SHORT COURSE IN PHARMACEUTICAL TESTING.

BY L. E. SAYRE, PH.G.

If one were to glance at the pages of the New Pharmacopœia he would undoubtedly be impressed with the careful work done by members of the Committee of Revision who had in charge the "standardization" of pharmaceutical chemicals, but the importance of this work will be more appreciated by the pharmacist should he practically use the methods and processes of testing as found in the pages of this best of laboratory guides for the pharmacist. It is unfortunate that to many pharmacists the chemical tests of the Pharmacopœia are almost a dead letter. In many instances this is the case, unfortunately, from a want of inclination, or want of interest in this line of work. The young men of to-day who are graduating from our schools and colleges of pharmacy, no doubt, are taught in such a manner as to appreciate this important side of our national standard; if this training be properly done, we have no question that the student in after-life has—what is unfortunately denied others—a peculiar gratification as well as financial advantage in his business career. I had a student, who holds a somewhat responsible position in a drug store, say to me: "While I have had no time or opportunity in my position to use the information gained in pharmaceutical testing in the laboratory of the school of pharmacy, yet it is of immense satisfaction to me that I am able to detect impurities by chemical means—am able to recognize a pure article when it comes to me, and am able to do this in the shortest, easiest and the most economical way."

It is the purpose of this article to draw attention to this very attractive line of work, and to the Pharmacopœia as a guide to its accomplishment.

It will be noticed, in studying the tests in the United States Pharmacopœia, that these tests are applied more particularly for the purpose of ascertaining the *absence* of impurity; that is to say, if the test applied as directed by the United States Pharmacopœia gives negative results, either the suspected impurity is absent entirely, or there is not a sufficient amount of the impurity to call the substance medicinally impure; in other words, if the substance under examination responds to the tests —proving the absence of suspected impurity—the article is up to the standard of medicinal purity according to our national standard. This may be best illustrated, perhaps, by taking two chemicals, one from the acids and one from the salts. For the acid we will take acetic, and for the salt we will take potassium acetate. The analysis or chemical tests for these read as follows:

Acidum Aceticum.—When the acid is slightly supersaturated with ammonia, the liquid should not have a blueish tint (absence of *copper*), nor should any residue be left after evaporating the alkaline liquid on the water-bath (absence of *other fixed impurities*).

Acetic acid diluted with 20 volumes of water should neither become colored, nor yield a precipitate with hydrogen sulphide T.S. (absence of *lead*, *copper*, *etc.*).

Acetic acid diluted with 10 volumes of water should not yield a precipitate or turbidity with barium chloride T.S. (absence of *sulphuric acid*), or with silver nitrate T.S. (absence of *hydrochloric acid*), nor should the liquid, after the addition of the last-named reagent, turn dark-colored on being warmed (absence of *sulphurous acid*).

When the acid is slightly supersaturated by sodium or potassium hydrate T.S., the liquid should not have a smoky odor or taste. And, if 5 drops of decinormal potassium permanganate V.S. be mixed with 2 Cc. of the acid, previously diluted with 10 Cc. of water, and contained in a clean glass-stoppered vial, the tint of the mixture should not change to brown within ten minutes (absence of *empyreumatic substances*).

To neutralize 6 Gm. of acetic acid should require 36 Cc. of normal potassium hydrate V.S. (each Cc. corresponding to 1 per cent. of the absolute acid), phenolphtalein being used as indicator.

Potassii Acetas.—Having prepared a solution of 2.5 Gm. of the salt in 50 Cc. of water, use 10 Cc. of it for each of the following tests:

After a portion has been acidulated with a few drops of hydrochloric acid, the addition of an equal volume of hydrogen sulphide T.S. should produce no precipitate (absence of *arsenic*, *lead*, *etc.*).

In another portion, acidulated with hydrochloric acid, 1 Cc. of barium chloride T.S. should produce no visible change (absence of *sulphate*).

If to a portion of the solution acidulated with nitric acid 0.1 Cc. of decinormal silver nitrate V.S. be added, the liquid should, after filtration, show no further change on the addition of more silver nitrate V.S. (limit of *chloride*).

Addition of 0.3 Cc. of potassium ferrocyanide T.S. should effect no change in the solution within fifteen minutes (limit of *iron*).

No coloration or precipitate should be produced by adding 1 Cc. of ammonium sulphide T.S. (absence of *iron*, *aluminum*, *etc.*).

Fragments of the salt, sprinkled upon sulphuric acid, should produce no effervescence (absence of *carbonate*), nor impart any color (absence of *readily carbonizable organic impurities*).

If 1 Gm. of potassium acetate be, by thorough ignition, converted into carbonate, the residue should require, for complete neutralization, not less than 10 Cc. of normal sulphuric acid (corresponding to at least 98 per cent. of pure potassium acetate), methyl-orange being used as indicator.

Acetic acid and acetate of potassium answering to these tests may be said to be medicinally pure. For the purpose of directing attention to this part of the Pharmacopœia, and for those who are inclined to follow a line of such laboratory work in pharmaceutical testing, I herewith suggest a line of chemicals and drugs for testing, arranged as a graded course of practical laboratory study. The first mentioned on the list are regarded as the more easily tested articles, these being followed in succession by the more difficult ones. A second list follows, embracing the test solutions, etc., necessary to accomplish the work. Provided with these test and volumetric solutions—explicit formulæ for which the United States Pharmacopœia provides—the student should be able in the course of five weeks to do the work with perfect ease and spend in it but from one and a half to two hours each day.

COURSE IN DRUG AND PHARMACEUTICAL ASSAY. LIST OF SUBSTANCES TO BE TESTED.

1. Acidum Salicylicum. Test for *iron, carbolic acid, HCl, carbonizable organic matter.*
2. Sulphur Præcipitatum. Test for *metallic impurities, arsenic, acid, alkali, soluble impurities, selenium.*
3. Bismuthi Subcarbonas. Test for *lead, copper, chloride, sulphate, silver, alkalies, ammonia, nitrate, arsenic.*
4. Hydrargyri Chloridum Mite. Test for *mercuric chloride, soluble impurities, ammoniated mercury.*
5. Potassii Bromidum. Test for *potassium carbonate, sodium bromate, iodine, calcium, barium sulphate.*
6. Acidum Hydrochloricum. Test for *copper, non-volatile impurities, arsenic.*
7. Chloroform. Test for *chlorides, free chlorine.*
8. Aqua Ammoniæ. Test for *carbonic acid, calcium, metallic impurities, sulphates, chloride, iron, volatile impurities.* Estimate strength quantitatively.
9. Potassii Bitartras. Test for *chlorides, sulphates, copper, lead, iron, calcium, ammonium salt, acidity;* and make quantitative estimation.
10. Liquor Sodæ Chlorata. Estimate *chlorine* quantitatively.
11. Calcium Hypophosphite. Test for *phosphate, sulphate, arsenic, magnesium.* Estimate strength quantitatively.
12. Glycerinum. Test for *dextrin sugar, fatty acids, metals, sulphuric acid, oxalic acid, calcium, chlorides.*
13. Acidum Carbolicum. Test for *creasote.* Estimate strength quantitatively.
14. Spiritus Ætheris Nitrosi. Test for *aldehyde.* Estimate strength quantitatively.
15. Aqua Hydrogenii Dioxidi. Test for *hydrofluoric acid, free acid, barium.* Estimate strength quantitatively.
16. Extractum Nucis Vomicæ. Assay, quantitatively, for alkaloids.
17. Acidum Phosphoricum. Test for *nitric acid, phosphorous acid, arsenic, phosphate, iron, sulphuric acid, hydrochloric acid, pyrophosphoric acid.* Estimate strength quantitatively.
18. Ferri et Quininæ Citras. Estimate *iron* and *quinine,* each quantitatively.
19. Cinchona. Assay, quantitatively, for alkaloids.
20. Opium. Assay, quantitatively, for alkaloids.

MATERIALS REQUIRED FOR THE ABOVE WORK.

Volumetric Solutions: Nitrate of Silver, Hyposulphite of Soda, Sulphuric acid, Potassium hydrate, Bromine, Fehling's solution, Iodine, Potassium permanganate, Oxalic acid, Sodium hydrate.

Test Solutions: Chlorine water, Ammonium sulphide, Starch, Silver nitrate, Barium nitrate, Indigo, Stannous chloride, Sodium hydrate, Ammonium oxalate, Barium chloride, Potassium iodide, Ammonium chloride, Ammonium carbonate, Potassium hydrate, Calcium hydrate, Mercuric chloride.

Other Solutions, etc.—Saturated alcoholic solution of Morphine, Potassium iodide (20-per-cent.), Phenol-phthalein, Tr. Ferric chloride, Rosolic acid.

MELTING-POINT OF COCAINE SALTS.

BY JOHN M. FRANCIS.

Much stress has been laid upon the melting-point of crystallized organic preparations, both as a means of identification and as a proof of their purity, or freedom from related compounds produced in their manufacture. Especially has this been true in the case of the alkaloids; we find, upon consulting the pharmacopœias and other authorities, that one of the prominent requirements, in most instances, is that the alkaloid shall have a certain "*melting point,*" at which it ceases to be a solid body and is resolved into a liquid. Furthermore it is a fact, of which anyone can easily convince himself, that hardly two of these authorities agree concerning the melting-point of certain of the alkaloids or their salts. The thought naturally intrudes itself: Why this diversity of opinion relative to compounds which have been known for years?

I hazard the opinion that in some instances the alkaloids or alkaloidal salts have no *true melting-point,* but rather a *decomposition*-point; and investigators have overlooked this fact because, by applying the same manipulation to successive samples, they have obtained results which "in the main" agreed, the experimenter attributing the difference between his results and those obtained by others to a difference in purity.

The alkaloids, being comparatively complex or highly organized bodies, readily decompose into simpler and more stable compounds; this decomposition being easily induced in most of them by the action of many agents, notably acids, alkalies, and particularly heat. Their power of resistance, of course varies, from that of the delicate salts of Physostigmine to the more stable derivatives of Strychnine.

What, then, is more reasonable than to suppose that the various results obtained by different individuals are due to the length of time the alkaloid was subjected to the action of heat, the degree of heat applied, or the manner of its application either before or during the determination of the melting-point?

It is true that the published results under discussion were not obtained by inexperienced investigators, but by veteran chemists of broad experience; but even these would not follow exactly the same details in determining a melting-point.

Most notably do the above statements apply to the salts of cocaine; the melting-point of cocaine muriate being variously stated at from 180° C. to 202° C.

My own observation has led me to believe that these results can all be obtained from the same sample by varying the length of time during which the temperature is being raised from 20° C. or 22° C. to the point of melting (or decomposition).

Having placed the previously powdered and desiccated cocaine muriate in the apparatus used, on gradually raising the temperature we see that the originally white powder becomes somewhat cream-colored, gradually turns a shade darker, then begins to melt at the edges; but at the *same instant* bubbles of gas are formed; the liquefying substance becomes amber-colored, then darker, and by the time the entire mass has become liquid the lower portion has become brownish.

The degree of coloring varies with the purity of the sample, the purest showing the least change, but in all there is an evident decomposition, which, taken in conjunction with the different results obtained with the same sample under slightly varying circumstances, would seem to prove that the *true* melting-point of cocaine muriate cannot be determined.

In the next number of the BULLETIN I shall offer as proof of my statements some results obtained by careful experimentation on cocaine salts.

Analytical Laboratory of Parke, Davis & Co.,
Detroit, September, 1893.

EXAMINATION OF COMMERCIAL TINCTURE OF IODINE.

BY F. H. NICKERSON.

The United States Pharmacopœia requires that tincture of iodine shall contain 8 per cent. by weight of that substance. In order to ascertain how closely the commercial article conforms to this standard, I have subjected a number of samples to quantitative analysis. Tincture of iodine usually contains varying percentages of hydriodic acid, due to a reaction between the iodine and its solvent. Ethyl iodide has also been reported as being present, but this statement is not confirmed by later investigators. It is then necessary, not only to estimate the free iodine of the tincture, but also that which has entered into chemical combination. This quantity has been reported by Göpel,[*] Grubourt,[†] and Carles;[‡] the last finding in tincture of iodine, which had been exposed to the light in a colorless flask for ten months, 1.12 per cent. of hydriodic acid. This statement has been copied by both the United States and National Dispensatories as "only $\frac{1}{12}$ of 1 per cent." The amount of the acid present is largely influenced by the age of the tincture, the degree of light to which it has been exposed, and by the alcoholic strength of the solvent. Probably there would be little or no loss of iodine in this way if the tincture were kept in the dark. I find in commercial tincture of iodine as high as .48 per cent. of hydriodic acid.

ASSAY METHOD.—A weighed amount of the tincture is titrated with solution of sodium arsenite, whose iodine equivalent has been carefully determined, using starch solution as an indicator. This gives the amount of free iodine in the liquid. The iodine in another weighed portion of the tincture is now, by the addition of excess of solution sodium arsenite, reduced to sodium iodide. Excess of solution of silver nitrate is added; precipitating *all* of the iodine as silver iodide. The solution is now strongly acidulated with nitric acid, dissolving both the silver arsenite and the silver arsenate, formed by the addition of the silver nitrate, while the silver iodide being insoluble in dilute nitric acid is unaffected. The precipitate is collected on a weighed asbestos filter, dried at 150°, and weighed.

This gives the total amount of iodine present. Subtracting from this the amount present as free iodine, gives the quantity present as hydriodic acid. Working with known quantities of iodine and potassium iodide, I find this method to give satisfactory results. I append the results of twenty analyses:

Sample No.	Free Iodine. Per cent.	Hydriodic Acid. Per cent.	Total Iodine. Per cent.
1	7.01	.27	7.27
2	6.53	.13	6.65
3	6.35	.35	6.69
4	5.42	.48	5.88
5	4.62	.29	4.90
6	5.61	.42	6.02
7	6.64	.08	6.72
8	7.22	.11	7.33
9	4.86	.39	5.25
10	4.82	.18	5.00
11	6.07	.00	6.07
12	3.77	.29	4.05
13	5.35	.00	5.35
14	7.08	.00	7.08
15	5.65	.05	5.70
16	7.23	.23	7.45
17	5.14	.00?	5.14
18	5.78	.14	5.92
19	6.17	.07	6.24
20	5.94	.31	6.24

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[*] Göpel, 1850, *Pharm. Cent. Blat.*, No. 13.

[†] Grubourt, *Journ. de Pharm.*, 3, 113.

[‡] Carles, 1874, *Bull. de la Société de Pharm. de Bordeaux*, 14, 169; *Pharm. Journ. and Trans.*, 3d Ser., 5, 88.

THE PURITY OF CHLORAL HYDRATE AS FOUND IN THE MARKETS OF MICHIGAN.

BY F. FABER.

It is of the utmost importance that the pharmacist be competent to make an examination of the drug, to satisfy all concerned as to its purity.

Perhaps one of the most common and constant adulterations is the chloral alcoholate. It has a very similar physical appearance, and is much cheaper; hence the liability of its use as an adulterant. It is therefore important to distinguish the hydrate from the alcoholate, for the latter not only yields upon decomposition a smaller quantity of chloroform, but therapeutists have found that its medical effects are different from those of the hydrate. The method of examination is the quantitative test for the chloroform value of the chloral compounds, originally suggested by Mr. Williams, and later worked out in detail by Mr. Umney (1870, "Hydrate of Chloral," *Pharmaceutical Journal and Transactions*, i, 107).

About 6 grammes of chloral hydrate are accurately weighed, and dissolved in about 20 cubic centimeters of water; the solution introduced into a graduated tube, and strong ammonia added in slight excess; agitate; immerse the tube in warm water to assist the reaction, and set aside for twelve hours.

Upon examination the fluid will be found to have perfectly separated into two layers—a lower one of chloroform, and an upper layer consisting of an alkaline solution of ammonium formate. If the sample were pure hydrate, the chloroform should weigh (if 6 grammes of the sample be taken), 4.33 parts by weight, or 72.2 per cent. of the hydrate employed. An admixture of the alcoholate with the hydrate will therefore be indicated, proportionately, by the decrease of the quantity of chloroform.

Chloral alcoholate can further be detected by dissolving a gramme of the salt in water, in a test tube, adding sufficient test solution of iodine until it retains but a slight yellowish tint; if chloral alcoholate is present, small yellowish, stellate crystals of iodoform will separate, which may be recognized by their appearance under the microscope.

Other impurities, such as chlorides, hydrochloric acid, or free chlorine, can be detected by dissolving in dilute alcohol and adding a few drops of nitric acid and test solution of nitrate of silver. If a precipitate appears which is insoluble in nitric acid, but soluble in ammonia, some one of the above may be present. In the twelve different specimens obtained from various parts of Michigan, none of the above impurities were found, but in not one specimen did the yield of chloroform come up to the standard. The chloroform yield ranged from 69 6 per cent. to 70.8 per cent.; pure hydrate should give 72.2 per cent. This deficiency is probably due to moisture, as chloral hydrate is extremely hygroscopic. It may also be due, in part, to decomposition, as indicated by the emission of vapors and by a pungent odor upon opening the vial.

In using the ammonia test, the solubility of chloroform must not be forgotten.

Dr. F. Versman (1871, "Chloral Hydrate," *Pharmaceutical Journal and Transactions*, i, 965) found that the solubility of chloroform in water was the cause of the inaccuracy of the test. Chloroform being slightly soluble (1 part in about 200 parts of water), correction should be made in testing chloral hydrate by the chloroform value.

BOTANY AND MATERIA MEDICA.

THE PRODUCTION OF AND TRADE IN CAMPHOR IN THE EAST.

BY P. L. SIMMONDS, F.L.S.

Although incidental notices have from time to time appeared in the pages of THE BULLETIN, yet no condensed notice of the production and commerce of camphor has yet appeared; and, having at command all the official trade and consular returns from China, Japan, and India, I have reason to believe that full particulars will be interesting to American readers. The importance of this commercial product is evidenced by the sum it brings into China and Japan, over £300,000.

The Chinese ascribe to camphor marvelous medicinal properties. It is stimulant at first, afterwards carminative and sedative, antispasmodic and diaphoretic. It is useful in cholera and diarrhœa. In large doses it causes giddiness and disposition to sleep. It has been injected subcutaneously as a hypnotic.

The use of camphor as a prophylactic has been handed down from the remotest periods. And so with other resinous perfumes which when burnt render the fever chamber innocuous and so prevent the dangers of infection.

It is possibly under this belief that the use of incense in the Greek and Romish churches and in pagan temples was so widely adopted. For in Eastern countries nothing could have been more conducive to remove the dangers arising from the crowding together of large bodies of worshippers, or more effectually disguise the effluvium arising from their often unwashed clothes and bodies, than the free use of powerful prophylactics.

The substances generally used for this purpose were myrrh, frankincense, aloes, benzoin, storax, olibanum, bdellium, camphor, and other resins, which, when placed upon burning charcoal, diffused through the air the scent emitted by the resins in their natural state.

A sort of camphor is obtained in China by distilling the leaves of *Blumea balsamifera*, Dec., and of many other plants of the families of Labiatæ and Compositæ. They furnish by analysis the following elements:

Carbon	77.56
Hydrogen	11.60
Oxygen	10.84

The name "camphor" is technically given to a number of gum-resins, more or less resembling each other, derived from different trees.

There are three sources for the supply of camphor: Formosa, Japan, and Borneo and Sumatra. We will take these in their separate order.

First, *Chinese camphor* from the island of Formosa.

The aggregate exports of camphor from China have increased considerably of late years, as the following official figures show:

	Piculs.
1886	1,331
1887	2,751
1888	3,892
1889	4,170
1890	7,261
1891	18,514
1892	17,785

The tree that furnishes camphor in Formosa is *Camphora officinalis*, Nees, *Laurus camphora*, Lin. The ports of that island from which the camphor is shipped are Tamsni and Tainan. The Chinese junks take it to Canton, and there it is packed in square chests lined with lead.

The yearly output of camphor in Formosa may now be estimated at, say, 20,000 piculs, or 25,000 cwt. If the full amount has not been reached yet, it is owing to the partial destruction of stills during recent outbreaks of the hill savages near Sakkokeny and Tokoham.

The foreign merchants of the port of Tainan appear to be gradually overcoming the difficulties which for so long have hampered them in their efforts to develop a paying trade in this valuable product. Ninkefish, a few miles south of Chipchip, appears to be the southern limit of the camphor tree which yields the right sort of camphor and in sufficient quantity to make it worth extracting. There are camphor trees further south, but they are reported to have a whitish wood and not to yield sufficient camphor to pay for the labor. The best kind of tree has a reddish wood.

Formosa camphor suffers from a disadvantage, inasmuch as it cannot be refined to the proper hardness without the adding of Japan camphor; the cause of which peculiarity has not yet been discovered.

The official report of Mr. H. T. Edgar, the Commissioner of Customs for the port of Tainan, dated Jan. 31, 1893, speaks as follows:

> The export of camphor is increasing, but I learn from a local merchant of standing that the yield during 1892 was less than in 1891, owing to the district of Tokoham, one day from Tamsni, and supplying largely the Tainan export, having been raided by the aborigines, who destroyed every still. This fact, coupled with the smaller production in Japan and the cholera scare in Europe—which raised the demand considerably—caused prices to rise gradually to $55 per picul (1⅓ cwt.) in Hong Kong, and they have lately varied between $50 and $53. Meanwhile, large tracts of camphor forest have been opened up south of Tokoham, which will soon improve matters. Some tribes whom the Chinese are trying to conciliate by largess, have made treaties with foreign firms, allowing them to build stills. The head men of these tribes receive a monthly stipend of 30 cents for each still. Such treaties are easily ratified—a few pigs, supplemented by some samsku and followed by a carousal, are the only essentials.
>
> In camphor the loss in weight between shipments here from Formosa and reshipments at Hong Kong is great—some 15 to 20 per cent.—partly due to the wetting after production, and partly to the amount of essential oil given off by the article during transit. Northern Formosa firms, I learn, have commenced to press the camphor immediately after leaving the stills, thereby removing the excess of oil and moisture before packing; the home reception of this new departure has not yet been reported.
>
> The stills, it is said, are very poor; they are manufactured by the natives on the spot where the trees seem likely to yield the best return. Foreign stills would be too cumbrous for transportation inland. The difficulty of transportating machinery over the inaccessible places on which the camphor trees usually exist forbids the use of foreign appliances.
>
> Around Chipchip vast forests of camphor exist, and it is to be hoped that the day will soon arrive when these —now under a ban through internal disturbance—will be opened to foreign enterprise. In 1893 it is foreseen that the export from here (Tainan) will be less than in 1892, as the producing districts are now in easy touch with the railway, by buffalo-cart and carriers, so that Tamsni will prove the most convenient outlet.,

Mr. H. B. Morse, the acting Commissioner of Customs at the port of Tamsni, writing also in January, 1893, thus speaks of Formosa camphor:

> The export of camphor was less by 3,791 piculs, the falling off being attributable to the disturbed state of the Tokoham district, and consequent diminution of supplies from there. The exports from this port have been:

	Piculs.
1888	2,873
1889	3,581
1890	6,484
1891	16,761
1892	12,790

> The fiscal arrangement regarding camphor which prevailed at the end of 1891 continued through 1892. Prices in Hong Kong were fairly steady through the year, at $38 to $40 a picul, but a flurry of speculation, and the loss at sea of a large quantity (stated to be 3,000 piculs) from Japan, brought quotations up to $55 to $57 in November and December.

Steps have been taken to reduce the quantities of oil and moisture, which lower the value of camphor shipped from this port, and it is confidently expected that the quality of Formosan camphor in 1893 will be quite equal to the Japanese product. Even with the present difference in quality, which is about 5 per cent. in favor of Japanese, the latter cannot compete with the Formosan product for the Indian market, which is estimated to require about 8,000 piculs annually.

This estimate for India is pretty near the mark. The imports were, in the financial years ending March:

	Lbs.
1891	1,370,869
1892	1,503,425
1893	1,300,380

About 900 lbs. of this is Bhimsaini or Baros camphor.

Production in Japan.—The camphor tree (*Camphora officinarum*) is very widely distributed in Japan, being equally common on the three islands of Niphon, Kiushiu, and Sikok, but it thrives best in the southern portion of the kingdom, namely, in the provinces of Tosa and Sikok. The seacoast, with its mild, damp air, agrees with it best, and hence the chief production of camphor is in those provinces. It is collected the whole year through, but the best results are obtained in winter. When the camphor-collectors find a spot with several camphor trees in the vicinity, they migrate thither, build a hut to live in, and construct a furnace for making the crude camphor. When that place is exhausted, the hut is torn down and carried to another place. The method observed in obtaining camphor is very simple. The workmen select a tree, and, with a hollow-ground, short-handled instrument, begin to chop off regular chips. As soon as the huge tree falls, the trunk, large roots, and branches are chopped up in the same way, and the chips carried to the furnace in baskets. The furnaces are mostly built on the side of a hill, near a stream of water, and serve for the wet distillation of the chips. The camphor when prepared is collected, packed in barrels, and lightly pressed; the oil, which amounts to at least 25 per cent., and is as clear as water, is poured off from the solid camphor, and both products are sent to market. At certain places the crude camphor is again pressed somewhat harder, when a good deal more oil runs through the crevices of the vessels. The tolerably dry product is sent mostly to Osaka, the chief export town for this important article of commerce. Perfectly pure camphor is not exported, but the crude country product is freed from the still adherent oil by further distillation in Europe.

Although for the manufacture of camphor it is necessary that the tree should be destroyed, yet a stringent law demands that another young camphor tree be planted in its place.

The export of camphor from Hiozo during 1891 was 3,850,400 catties (about 5,000,000 lbs.). The average price per picul (133⅓ lbs.) last year was $36.50. The export of camphor from Japan has seldom reached 5,000,000 catties, and for the last four or five years has averaged 4,500,000 catties.

There is a good deal of adulteration practiced by the native makers, generally by adding water.

Camphor is generally manufactured in the immediate vicinity of the camphor-tree region, on the border of the country occupied by the Formosan aborigines. The wood is cut into small chips by means of a gouge of a peculiar shape. The lower parts of the tree and the roots, where the sap is most abundant, yield the material richest in camphor; for this reason the chips are often gouged from the foot of the tree only, and the rest of the wood is not made use of for camphor distilling. The chips, having been placed in a kind of retort, are permeated by the steam generated in a boiler underneath. By the action of the steam the sap is sublimed, and as it ascends into an earthenware receiver placed above the retort it condenses into solid camphor on the inner side of the receiver.

In 1889 an unexpected demand arose in Europe consequent upon the invention of smokeless gunpowder, in the manufacture of which camphor was at first used as an ingredient. This industry has lately ceased to cut on the trade, since further developments have created other combinations, in which the percentage of camphor used has been reduced to a minimum. Other industries, however, which have lately assumed important dimensions, such as the manufacture of celluloid and fireworks, have combined to absorb great quantities of this drug, which is as yet an indispensable constituent of the materia medica of the West.

An oil drains out of the vats or tubs in which the crude camphor is packed before exportation. It is used by the Chinese for rheumatism, and is distinguished by its odor, which resembles that of nutmeg or sassafras. It is as agreeable as the concrete substance, and almost as cheap as spirits of turpentine.

The camphor oil in Japan (called *skono abura*) is used, by very poor people only, as an illuminating oil, and in spite of its strong smell and smoke it is burned in open lamps.

Malay or Borneo camphor is obtained from *Dryobalanops aromatica*, Gaert., a tree growing in Borneo, Sumatra, and the Malayan Archipelago. In Sumatra the best camphor is obtained in a district called Baros, and hence passes under that name in commerce. It is found in concrete masses in the fissures of the wood. There are, however, but very few trees that afford it; and those that do, only in small quantities. It is far more fragrant than the Formosa and Japan camphor, but whether it possesses any superior virtues is exceedingly doubtful. It is remarkable for not subliming at the ordinary temperature of the air. This kind is used almost exclusively by the Chinese, who give very high prices for the article, far beyond its intrinsic value. The first quality of Borneo camphor is valued at 12 guineas per catty (9 guineas per pound).

Baros or Sumatra camphor is also from the same tree.

When the order is given by the Rajah for a certain number of men (about thirty) to gather camphor in his territory, the company seek out a place where the trees abound, form an encampment, and divide themselves into two parties, one felling the trees, the other gathering the camphor. The tree is divided into small pieces, and, on these being split, the camphor is visible in small granules in the crevices of the branches and trunk. Not more than half a pound is obtained from a single tree, and if we take into account the great and long-continued labor requisite in gathering it we have the natural reply to the question why it fetches so high a price.

According to the natives, there are three kinds of camphor tree, which they designate by the outward color of the bark, which is sometimes yellow, sometimes black, and often red.

The imports of camphor into London in 1890 were exceptionally large, amounting to 13,722 packages, nearly double the quantity received in any previous year. In 1891 the imports were 8,656 packages, and in 1892 8,429 packages. The deliveries during last year were 10,029 packages, and the stock held at the beginning of this year was but 2,727 packages.

Attention has been frequently drawn in the BULLETIN* to the fact that the camphor tree has been acclimatized in several of the Southern States, from the distribution of seed by the Agricultural Department. In South Carolina and Florida it seems to flourish. As the plant grows well over a large area in the more Southern States, it is expected that the preparation of its products will ultimately become a profitable industry, and save an outlay of $400,000 or $450,000 for the foreign product.

Australia and New Zealand are already directing attention to the growth of the camphor tree. A hundred young plants have lately been safely taken to Australia.

Judging by the imports, it would seem as if there was a decline in the use of camphor in the United States. Some ten years ago the receipts averaged from two to three million pounds annually; but of late years (though free of duty) the imports are declining. They were in the three last fiscal years as follows:

	Lbs.	Value.
1889	1,961,018	$287,333
1890	2,055,287	420,331
1891	1,716,167	468,060

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* Vol. iv, pp. 155, 342, 423; vol. vi, p. 227.

[Some of the following answers to correspondents were unavoidably crowded out of our issue of last month. —ED.]

W. W. L. (Wash.)—We identify the plant sent us by this correspondent as the *Ledum latifolium*, Ait., commonly known as "Labrador tea." We are told that it is an excellent diuretic, but we had not previously heard of its use in this direction. So very much depends upon the quantity of water taken, commonly as a menstruum in infusions, that almost anything can be made a diuretic if taken in sufficient of that liquid. It has been used in regular practice in some varieties of bronchitis requiring a combined tonic and expectorant. There is a fluid extract of it upon the market.

P. A. K. (Mich.)—Specimen is *Leonurus Cardiaca*, Lin., popularly known as "Motherwort," and largely used in domestic medicine as an emmenagogue and antispasmodic. Our correspondent informs us that it is used popularly in his neighborhood for stopping all kinds of passive hæmorrhages.

E. P. (Calif.)—This correspondent sends us two plants for identification, stating that No. 1, called in his district by the Mexican name of "La Rosita," is used in catarrhal affections. We make identification of it to be the plant known botanically as *Helenium puberulum*, DC. There is no published record of its use medicinally of which we are aware, but it appears to be quite odoriferous—through the presence probably of some essential oil which, no doubt, would prove beneficial in the treatment of some varieties of catarrhal affections from its stimulant and also, we presume, antiseptic properties.

Specimen No. 2, labeled with the popular name "Borell," as given by our correspondent, is identified as *Solanum nigrum*, Lin. The berries of this, our correspondent informs us, do not appear to be poisonous, as "children gather and eat them without experiencing any ill effects." It is claimed, however, in Europe, that cases of poisoning have been caused through the eating of the berries of this plant, but so far no such effects have been recorded with the plant as it is found in the United States. It should be, from its relationships, and doubtless is, a mild narcotic if eaten in sufficient quantity.

J. N. C. (Ariz.)—This correspondent sends us two plants which he calls by the local names "Jodeondia" and "Cantallia"—Mexican names, evidently. We make identification of these plants to be, respectively, *Larrea mexicana*, Moricand, and *Ephedra antisyphilitica*, C. A. Meyer. The former is a very resinous plant and the resin has a very smoky, empyreumatic smell, and for this reason has been called by the English-speaking residents "Stink weed," "Creasote bush," etc. Our correspondent calls attention to its use as a remedy in catarrhal affections of mucous membrane, such as gonorrhœa, etc., but the smell of the resinous principle is too offensive for its use in other than its own local habitat. The latter plant mentioned is also used for the same purposes, we are told. It is much more likely to be a remedy that would be used by those outside of its own district, as it possesses no offensive characteristics and is equally efficacious. A fluid extract of it also is to be found upon the market. It has at various times been brought to our attention by the residents of Arizona and New Mexico, and its vernacular names are very numerous, it being known, for instance, as Canutillo, Tepopote, Mountain Tea, Mountain Rush, Tempi-weed, etc.

A. A. M. (Mich.)—Antikamnia is a proprietary medicine, and not a definite chemical as you supposed. While we do not give very much credit to the analyses of articles that are of a proprietary nature, we have lately seen the analysis—published by a very reliable source, as we think—of the article in question, and the composition was given as follows:

	Parts.
•Acetanilid	70
Sodium bicarbonate	18
Caffeine citrate	10
Sodium bromide	2

This department of THE BULLETIN does not undertake analyses of this character, and we have simply responded to your inquiry because the answer came so easily to our hand.

A. J. D. (Mich.)—This correspondent asks us what is the drug known as "Red Willow." We make reply that it is botanically known as *Cornus sericea*, Lin. It is perhaps better known as Red Osier, and under the latter name is listed by Detroit manufacturing houses. A fluid extract of it may be obtained upon the market.

J. F. N. (Tex.)—Our correspondent sends us a specimen, and asks for botanical identification, of a plant which he names "Broom Weed," "Bitter Weed," "Quinine Weed," all names given it, he says, in his locality; we are also informed that it is largely used by public speakers and singers for "clearing up the voice," hoarseness, etc. The plant we make identification of as the *Gutierrezia texana*, Torr. & Gr. The plant is quite resinous, and there may be some stimulating property in it that accounts for the beneficial action spoken of. We have not previously had the plant brought to our attention; neither do we find it recorded in any of our works on economic botany.

T. J. T. (Tex.)—"Coyotillo" and "Coyolia" are the vernacular names attached to the specimen of a plant sent us for identification by this correspondent. We identify it to be *Karwinskia Humboldtiana*, Zucc. We are informed that the Mexicans say that when eaten in any quantity the berries or leaves cause paralysis. The paralysis, however, is said to be peculiar in this respect, that it is not so much a total loss of muscular power as a want of muscular co-ordination between the right and left sides of the body. For instance, our correspondent informs us that a boy who had eaten some of the berries was able to walk in a straight line, but, if he should stumble or fall, was not able to get up without assistance, the symptoms being somewhat more like a case of progressive locomotor ataxia than purely simple paresis. Our correspondent is a medical man, and says he has seen several cases of the effects of eating the berries of this plant, and we think a thorough investigation of their properties would be an interesting study. The poisonous effects mentioned were fortunately not permanent in character.

H. C. K. (Wash.)—This correspondent wishes us to print "a remedy for the removal of the dark circles around the eyes of males"—not an easy task, by any means. So much depends upon the cause of the "dark circles," and there are so many causes, that we are inclined to beg off. There are many persons, both male and female, who on becoming fatigued from over-exertion show these dark circles, but on resting, without employing any medicine, the circles will of themselves disappear. Sometimes tubercular patients will show these circles under the eyes when emaciation has developed. Uræmic poisoning and kidney troubles also show their presence in this way, so that it would be too much to expect us to furnish the remedy desired by our correspondent. Some one suggests that it is "black eyes," so-called, which are troubling our friend. If that is the case, and only effusion of blood or ecchymosis causes the "dark circles," then by all means use witch-hazel. The distilled extract is the best preparation of the article for that purpose.

Winchester.

W. H. H.—In our last issue, Winchester *pint* should have read Winchester quart, which is equal to one-half gallon imperial, or five pints wine measure.

Iron Preparations Becoming Dark-Colored on Exposure to Light.

M. & Co. ask the cause of elixir calisaya, iron and strychnine becoming dark after standing some time on the shelf.

The sample of elixir submitted contains iron pyrophosphate, and the change in color is evidently due to the influence of light on this salt.

As iron pyrophosphate, U. S. P., and also iron phosphate, U. S. P., are complex bodies, on the composition of which several views are held, it is difficult to say just what changes take place when they are exposed to the light, but it is probable that the light exerts a reducing power on some iron salt present. The change having once taken place, we know of no way of restoring the original color.

You will observe the necessity of carrying iron preparations in a place remote from light—there being a few exceptions, such as syrup iron iodide, which are better preserved by exposure to light.

Fluigram.

Metric.—Fluigram was a term proposed by Mr. A. B. Taylor, of Philadelphia, some years ago, as a substitute for cubic centimeter. It was claimed to be "more convenient, euphonious, and American," but did not meet with much favor, and is now seldom used.

Formulæ for Curry Powder.

S. E. W.—We reprint below several formulæ for this article, obtained from various sources. In order to obtain good results the material should be selected with great care.

(1) Said to be the formula for true Indian curry:

	Grains.
Coriander seed	360
Turmeric	100
Fresh ginger	260
Cumin seed	18
Black pepper	54
Poppy seed	94
Cinnamon	20
Cardamom	40
Cloves	20
One-half cocoanut, grated.	

All but the cocoanut to be ground together.

(2) Said to be the formula for Dr. Kitchener's curry:

	Ounces.
Coriander seed	3
Turmeric	3
Black pepper	1
Mustard	1
Ginger	1
Allspice	½
Cardamom	½
Cumin seed	¼

Reduce to a fine powder, mix thoroughly, and preserve in well-stoppered bottles.

(3) Also given us as the formula for true East Indian curry:

	Ounces.
Coriander seed, powd	8
Allspice, powd	¼
Mace, powd	¼
Caraway, powd	¼
Fennel, powd	¼
Celery seed, powd	¼
Turmeric, powd	8
Black pepper, powd	1
Capsicum, powd	½
Mustard, powd	2
Ginger, powd	1
Cloves, powd	¼
Table salt	8

Mix thoroughly by sifting, and set aside, tightly corked, for thirty days.

Golden Tincture.

G. O. P., Washington.—Dick's Encyclopædia gives two formulæ for this preparation, as follows:

			Parts.
(1)	℞	Sulphuric ether	3
		Acetated tincture of opium	2
		Compound spirits of lavender	1

Mix.

(2)	℞	Sulphuric ether	1 oz.
		Tincture opium, U.S.P	1 oz.
		Chloroform	¼ oz.
		Alcohol	1 oz.

Mix.

This preparation is used extensively by German physicians, and is said to make an excellent local application in neuralgia and other painful affections. The dose is given as 3 to 30 drops, according to circumstances.

Schweissinger's Reagent for Alkalies.

H. R.—This is prepared as follows: Dissolve equal parts of iodine and tannic acid in absolute alcohol. This solution produces a transient rose coloration in dilute solutions of any salts having an alkaline reaction. The test is so delicate, it is stated, that with carbonate of potassium the color is perceptible in a solution which contains only one part of the alkali in 1,000,000 parts of water.

Tooth-Paste.

W. M. & Co., Toronto.—In the manufacture of tooth-pastes, care should be taken that all dry material be reduced to an impalpable powder before mixing with the honey or syrup. The fine powders are to be first thoroughly mixed and then incorporated with the honey, which has been rendered thin by gently heating. The oils are then added, and the paste allowed to stand twenty-four hours before placing in jars.

We offer several receipts, from which you can choose one best suited to your wants:

CHERRY TOOTH-PASTE.

℞	Pumice stone, finely powdered	2 oz.
	Myrrh, finely powdered	½ oz.
	Orris root, finely powdered	2 oz.
	Honey	4 oz.
	Oil of cloves	30 minims.
	Essence of lemon	90 minims.
	Otto of rose	8 drops.
	Liquid cochineal, q s. to color.	

SOAP TOOTH-PASTE.

℞	Castile soap, powdered	2 oz.
	Cuttlefish bone, powdered	2 oz.
	Honey	4 oz.
	Oil of cloves	40 minims.
	Oil of cassia	40 minims.
	Oil of almond, bitter	30 minims.

This may be colored by the addition of cochineal if desired.

PERUVIAN BARK TOOTH-PASTE.

℞	Prepared chalk.	2 oz.
	Myrrh, powdered	½ oz.
	Orris root, powdered	2 oz.
	Honey	4 oz.
	Peruvian bark, powdered	240 grains.
	Oil of wintergreen, q.s. to flavor.	

Quinine tooth-paste can be made according to the last formula, substituting 30 grains of quinine sulphate for the Peruvian bark. This paste may be colored pink with cochineal if desired.

The choice of flavors is, of course, arbitrary, and the oils in any of the above formulæ may be displaced by others.

Soluble Cayenne Pepper.

C. B. S.—A soluble Cayenne pepper can be made by macerating 1 lb. of Cayenne pepper in 1 pint of alcohol for two days. Then place in a percolator and displace the tincture, which should now be thoroughly incorporated with 1 lb. of common salt, and sufficient annatto added to give the mixture the proper color. Evaporate off the alcohol and dry the product at about 120° F., and pass through a coarse sieve. If made in large quantities, the alcohol should be recovered by distillation.

LONDON LETTER.

The Cholera - Reception of the United States Pharmacopœia—Proprietary Preparations and "Patent" Medicines—The New Attfield—Romance in the Drug Trade—Indian Hemp, its Use and Abuse—Pilocarpine—Professor Maisch.

After the exceptional summer that has been experienced, the course of the cholera epidemic on the Continent has been watched with some degree of apprehension, and the same strict quarantine and sanitary precautions have been taken as were enforced last year. Fortunately, the alarm raised a few weeks ago by the appearance of a few sporadic cases of what appeared to be the true Asiatic cholera has proved to be without foundation. Undoubtedly in one or two ports, notably in Grimsby, ships have arrived with one or more of the crew suffering from the terrible malady; but the watchfulness of the port sanitary authorities has prevented communication with the shore, and the cases reported in various parts of the country have been only instances of severe choleraic diarrhœa, fatal in a few patients with enfeebled constitution, which have been magnified by indefinite reports and rumors. The action of the responsible medical officers of health in promptly isolating each suspicious case can only be commended, and, as a rule, they have furnished the public, as far as they have been able, with all particulars calculated to allay popular excitement. It is the bacteriologists who have been presented in the most unfavorable light. Whilst declining to affirm the disease to be of the malignant Asiatic type, the bacteriological reports state that it is indistinguishable from it. After so frequently and boldly describing the comma bacillus as the generator of the Asiatic cholera, it would indeed be a fiasco if experts were unable to distinguish it from other micro-organisms.

In pharmaceutical circles the new issue of the United States Pharmacopœia has been freely criticised, and the careful definitions of the drugs and the precision of the tests for identification have been very favorably spoken about. It is generally admitted that the new Pharmacopœia is very much in advance of the British Pharmacopœia—which is, of course, only what was to have been expected, on account of the revision of the former being so much more recent—but there is an universal opinion expressed in favor of the incorporation of more complete directions into the official book here for the testing of chemical products, especially of the newer remedies, so that a pharmacist may be able to give as full a personal guarantee of their nature and quality as if they were manufactured by himself. The decision of the Committee of Revision to exclude those remedies which, although of definite and known composition, are only manufactured under letters patent, is received with mixed feelings. Whilst the disadvantage of creating monopolies is recognized, yet it is felt to be detrimental to the interests of medicine that a valuable medicament should fail to receive official recognition because of commercial considerations.

In reference to the question of proprietary preparations, it may be not uninteresting to note the immense falling off in the sale of the so-called "patent" or proprietary medicines in the United Kingdom during the past year, as shown by the report of the Commissioners of Inland Revenue. In 1860 the medicine stamps yielded over £43,000 revenue, and this was increased on an average by £5,000 annually from 1860 to 1887, and by £12,000 annually from 1887 to 1892. In the last completed year, however, the revenue from this source has fallen by £20,000—a trivial figure in itself, but significant of a decreased sale equivalent to three million packets of medicine. The principal factor involved in this decline is undoubtedly the recent legal attacks made by the Treasury and the Pharmaceutical Society on vendors of proprietary medicines containing poisons. The notorious chlorodyne case, which resulted in the decision that such preparations must bear a poison label, has had the effect of causing many unqualified retailers to discontinue the sale of a number of preparations. But this is not the only cause, as in the absence of other influences the business would simply have been transferred from grocers to chemists without making any difference in the total consumption. The public mind has been alarmed in consequence of the legal proceedings and the appearance of the poison label. But whatever may be the cause or causes of the deficiency, the revenue has evidently been more affected than the chemists' returns.

The publication of the revised Pharmacopœia has also been the signal for the preparation of a new edition of the Universal Attfield for the pharmaceutical student. It is understood that this is already well in hand, and that Professor Attfield has made many radical alterations in the book in order to bring it up to date, some chapters on chemical compounds which have especially been the object of scientific research during the past few years being entirely rewritten.

Another contribution to the literature of the drug trade which may not inaptly find its way to the chemist's shelf is the romantic autobiography of Mr. Arthur Robottom, who is well known on the Mincing Lane market in the borax interest. His reminiscences, although told without any pretense of literary ability, are so full of varied incident and so graphically depicted as to read like a romance. Mr. Robottom made his first acquaintance with the drug business in reviving the old trade in Thibetan tincal as a substitute for borax in 1845. The adulteration resorted to by Indian exporters soon spoiled a promising business; and only the loss, off the Cape of Good Hope, of some heavy consignments of the depreciated article insured at the previous high market value, saved Mr. Robottom from ruin. Not before starting a borax-refining plant and competing with the Tuscan boracic-acid makers did he, however, undertake voyages to Brazil and Mexico, which resulted in the introduction of piassava and Mexican fibre, as well as carnauba wax and other commodities. With the money so amassed he invested in the English paraffin-oil business and worked a "claim" in Cheshire with great success, until the find of the Pennsylvanian petroleum springs reduced the value of his retorts to old iron. Rising from this blow, Mr. Robottom started once more on his wanderings, which culminated in the discovery of borax in Death Valley, Nevada. Subsequently he also investigated the boracite deposits in Asia Minor, and also turned his attention to the west coast of South America, where he explored the nitrate regions of Chili, penetrated far into Bolivia, and afterwards repeatedly visited Peru.

In the Section of Psychology at the recent meeting of the British Association at Nottingham, a paper was read on "Insanity from the Abuse of Indian Hemp," by Dr. Ireland, the Government Medical Officer in British Guiana. The vice had been introduced into Guiana and the West Indies by the East Indian coolie immigrant, and was almost entirely confined to the male sex and to Hindoos. Fully 30 per cent. of the coolie patients admitted to the Berbice Lunatic Asylum showed a history of having been habitual smokers of the drug. After describing the different stages of incipient mental disorder, and the course of the various types of insanity due to excessive use of the drug, with their prognosis and treatment, Dr. Ireland remarked that as yet no special pathological change had been observed in such cases, except the common occurrence of asthma in smokers of ganja (the dried flower-tops of *Cannabis Indica*). He illustrated his remarks with a clinical account of three typical cases of the extreme forms of insanity—the first being one of acute mania, with homicidal impulse; the second acute melancholia, with attempted suicide; and the third, one of chronic dementia.

In the discussion several speakers expressed opinions on the use of the drug. Dr. Campbell Clark had found it useful in utero-ovarian cases, especially at the climacteric, when it was often a reliable sedative. Dr. Alex. Patton mentioned that he had treated two very severe cases of traumatic tetanus with the steady use of one drachm of the tincture of Indian hemp, repeated as often as the spasms recurred or increased in violence; both cases recovered, one in three weeks, the other in a shorter period. Dr. Ireland also agreed that in some forms of insanity Indian hemp is a valuable sedative and soporific.

It has been shown by Professor Politzer, and confirmed by the observations of Drs. Barr, Field, Bronner, and others, that the daily hypodermatic injection of one-third of a grain of pilocarpine cures certain cases of inflammatory, syphilitic, and hæmorrhagic deposit in the labyrinth of the ear, especially when of recent and sudden occurrence and when the tuning-fork is heard longer opposite the meatus than on the mastoid. In old-standing syphilitic cases, and in cases resulting from meningitis, Dr. Metcalfe has never observed the slightest benefit, but he thinks that pilocarpine medication to the tympanum and Eustachian tube is often a useful method of treating chronic tympanic catarrh when routine treatment has failed. Very often, when the hearing power is not increased for the watch, patients are positive as to their subjective improvement. Pilocarpine drops, 8 grains to the ounce, with glycerin and water, applied to the external auditory meatus, in dry conditions of the meatus and membrana, often afford some relief. There is a great difference between the action of different samples of pilocarpine. Dr. Metcalfe has often found one tenth of a grain to produce free perspiration, when in the same series of patients one-third of a grain obtained from another source has produced no effect.

The report of the decease of Professor Maisch, though by no means unexpected, has been received here with widespread regret. At the same time, general satisfaction is expressed that English pharmacists were able to recognize his services to pharmaceutical science on the latest public occasion.

BERLIN LETTER.

The Apotheker Verein and the Scientists' Congress—A New Preparation of Caffeine—The Constituents of Pepper—Java Drugs—Coffearine, a New Alkaloid—The Calomel Reaction for Cocaine—Diaphtherin.

The meeting of the German Apotheker Verein that took place in Frankfort during the past month was a very successful one, and particularly interesting because for the first time none but delegates from the various German districts had a voice in the discussions, which as usual turned upon pharmaceutical education, the relation of proprietors of businesses to each other, and other social questions.

A week later the Scientists' Congress was held at Nuremberg, but in the section devoted to pharmacy and pharmacognosy much disappointment was felt at the absence of the university element in pharmacy, which was only represented by Professor Beckmann from the neighboring university of Erlangen. This no doubt accounted to some extent for the scarcity and poverty of the papers, but the attendance in this section was very meagre, and, to the credit of the Berlin Pharmaceutical Society be it said, was more than half composed of members of that body.

The only novel product introduced to the notice of pharmacists was a preparation of caffeine, caffeine sulphonic acid and its salts, which is described as a new diuretic. Dr. Heinz pointed out that digitalis and similar preparations are not true diuretics, as, although in certain dropsical cases the excretion of urine is considerably aided, yet this is effected by stimulating the heart's action and improving the circulation. Besides vegetable products, and alkaline and mercurial salts, the only means of increasing the activity of the renal cells are the xanthine derivatives, especially theobromine and caffeine, the di- and tri-methyl xanthine.

Yet the action of caffeine and theobromine is uncertain, because the production of urine is dependent upon two factors, renal activity and the circulation of the blood. The contractile action of these alkaloids upon the blood-vessels decreases the circulation and generally compensates for the stimulating action on the secretions. Many methods have been attempted to annul or destroy the contractile action, with only partial success. In conjunction with his co-worker, Dr. Liebrecht, Dr. Heinz has observed that in many instances the sulphonates or carbonates of energetic compounds completely lose their action on the nerves.

Sodium caffeine-sulphonate dissolves slowly in cold water, rapidly in hot. It does not possess the action of caffeine upon the nervous system, and the blood-pressure remains unaltered even after intravenous injections of ten or fifteen grains. At the same time the diuretic action is very pronounced, and it is free from any unpleasant secondary symptoms, so that it promises to find employment in renal and cardiac affections. The sodium salt has received the trivial name "nasrol." The lithium and strontium salts have also been prepared, and are much more soluble, but likewise very active and innocuous. The lithium salt especially appears indicated in uric-acid diathesis.

An interesting paper was read in the second day's proceedings by T. Weigle, on the constituents of pepper. The writer showed that the pungent taste of this spice is not due to a resin as generally described, but to the alkaloid piperine itself. Even in the dry state piperine possesses a pungency when placed for some time upon the tongue, but develops it very rapidly when dissolved in the essential oil, which is itself tasteless though possessing the characteristic aroma of pepper. Old fruits taste less pungent because the solubility of the piperine in the essential oil is affected by the resinification of the latter.

Dr. Greshoff, who has for some time served as army apothecary in Buitenzorg, Java, not only contributed an article on the phytochemistry of plants, but also described a number of Javanese plants possessing interesting pharmacological features. Amongst these may be mentioned *Pangium edule* and *Hepnocarpus inebrians*, used for the preservation of fish, which contain a large quantity of free prussic acid. The action of the chaulmoogra oil from *Gynocardia odorata*, another Pangiaceous plant, is also due, according to Greshoff, to prussic and not to gynocardic acid. *Isotoma longiflora*, a Lobeliaceæ, is used as tobacco. *Sterculia fœtida* emits an odor of human excrement, probably due to scatol. The flowers of *Nyctanthes arbortristis* are employed as saffron, the odor of which they exactly duplicate. *Pachyrrhizus angulatus* contains derrid. *Samadera Indica* is called by Rumphius "Rex amarorum," on account of its bitter principles. *Streblus asper* contains a very active poison in its bark. *Hura crepitans*, a Euphorbiaceæ, is employed as a remedy against leprosy, and *Rhinacanthus communis* against herpes.

From time to time reports of the presence of other alkaloids accompanying caffeine in tea and coffee appear, and promises of further particulars are made, but up to the present very little definite information has been published. Palladino, however, describes the isolation of a new alkaloid, coffearine, from coffee, which, if the composition ascribed to it be correct—$C_{14}H_{16}N_2O_4$—is probably a member of the cholin or xanthine group also, and, in view of Hilger's investigations on caffeine and theobromine, presents a great many points of physiological interest. Coffearine is extracted, together with caffeine, from the finely powdered coffee by boiling with very dilute lime-water, from which the caffeine is separated by chloroform. The second alkaloid is precipitated from the aqueous solution, with Dragendorff's reagent, as the bismuth iodide, which is decomposed by silver oxide, and the base obtained as a crystalline hydrochloride. Three grains of coffearine killed a frog, with narcotic symptoms; the nerve-centres were excited; the motoric nerves still retained their activity.

The reaction of cocaine hydrochloride with calomel, consisting in the blackening of the mixture when breathed upon or when a trace of water is added, is now known to be also given by pilocarpine hydrochloride even more distinctly. The cause of the blackening is, however, a matter of dispute. According to the latest investigation by W. Lenz, it is not due to the formation of mercurous oxide, but of metallic mercury itself. If the mixture of excess of calomel and the black substance be washed upon a filter-paper and dried slowly, the metallic globules can be distinctly seen under the microscope, and a gold coin placed therein at once receives a mercurial coating. Mercury is also taken into solution with the cocaine and pilocarpine salts, and the filtrate gives a distinct precipitate with potassium iodide similar to that obtained with Mayer's reagent, so that evidently a double salt of both cocaine and pilocarpine is formed with mercuric chloride.

The antibacterial action and pharmacological behavior of the loose compound or mixture of aseptol (paraphenolsulphonic acid) and oxychinoline, known as oxychinaseptol or diaphtherin, has been investigated in the bacteriological laboratory at Munich by Dr. H. Stabel. As a result of his experiments, he finds that the health is in no way endangered by the continuous employment of diaphtherin, as it is never required in poisonous quantities for therapeutical purposes. On account of its relative non poisonousness, it is specially adapted for the washing-out of hollow spaces in cases in which no stronger disinfectants than slightly antiseptic solutions of boric acid could be employed. It is further preferable in 1- or 2-per-cent. solution to other disinfectants when a moist antiseptic dressing has to remain for a long period, as in burns, in persistent ulcerous processes, and in extensive crushed wounds. Respecting the complaints made by surgeons that it turns the hands and especially the nails yellow, Dr. Stabel remarks that this is not a specific property of diaphtherin, but is only the case when the skin is impregnated with corrosive sublimate. The oxychinoline of the diaphtherin combines with the mercury of the corrosive sublimate to form a yellow lake.

NEW YORK LETTER.

The outcome of the business in wholesale circles during the past month has been in the main disappointing. While, from the prompt action of the House in voting to repeal the purchasing clause of the Sherman Act, strong encouragement was given to trade generally that business matters would assume normal conditions, the assumption that the Senate would act with equal promptness was, as we now know, misleading. In the absence of definite action on the part of the Senate, doubt seems to be again prevailing among merchants, thereby seriously curtailing business transactions of importance; and it does seem that until this element of doubt is removed, business cannot again resume its normal condition. We are glad, however, to report a very decided gain during September, over the preceding month, as, despite financial uncertainty, consumption of medicine must go on. Stocks, therefore, must be renewed, and in consequence of this demand a large volume of business has been done, although not equal to what was anticipated. The demand has not been sufficient to materially alter quotations, the market generally standing at just about where it was when my letter was written a month ago.

Speculation is entirely absent, and whatever buying has been done has been for actual necessities.

Opium.—The slight increase in price reported in my letter of last month has not been sustained. Slack demand and encouraging reports from original markets have tended to discourage buyers, and there are no good reasons for expecting an early advance in prices.

Quinine has been in exceedingly active demand, and very large parcels have been taken from the market for consumption, but the remarkab'e spot supplies of the article have seemed inexhaustible. There did seem some indications, towards the end of September, that higher prices would be realized, and there was a certain degree of firmness on the part of holders. This, however, has passed away, and the article is as weak to-day as at any other time in the past months. It seems that some holders at second-hand have endeavored to bolster up prices, but all without effect. The article can be bought as low to day as when my last month's letter was written. Asking prices are from 1 cent to 1½ cents higher, but under pressure holders yield. How long this condition of things can last, none can tell, but the report as given above shows the actual condition of our market to-day on this important article.

Menthol.—The light supplies that were held in this market have been taken up by consumers. Cablegrams received within the past two days indicate that in Japan there is none, nor can any be expected until the new crop is prepared. A further advance of 25 cents a pound in original cases has taken place, and it is altogether probable that a still further important rise will be realized before the advent of the new crop. In my last letter I indicated that the result of this year's crop would be large. This is still further confirmed to us by later letters and cablegrams, but the crop will not be available before January. Therefore, for three months, supplies in hand must suffice, and, as the season for its use is now rapidly coming upon us, there is no reason why there should not be higher prices than have ever been known before, or at least for a number of years past.

Senega root remains quite neglected and at low prices. There seems no demand either for home consumption or for export.

Cod liver oil, Norwegian, is selling to-day in this market at prices lower than those asked for prime oil in Norway. There seems no real reason for this other than a desire on the part of holders to realize money. The demand has been somewhat active, and parcels of considerable size have changed hands during the month. Our market is full of the lower grades of oil, but for the higher Lofoden grade there seems no disposition to break prices.

Gum gamboge is in very light supply, so far as the article of high grade is concerned. There is considerable demand. Large sales have been made, and a distinct advance in price may be recorded.

Insect powder has been in light demand, and considerable stocks have been withdrawn from this market in fulfillment of forward contracts. This important article is now exceedingly cheap, and it is believed that it would pay users to lay in even now their stocks for next year. At Trieste, the principal market for the flowers, considerable stocks are just now accumulating—only, however, because of the scarcity of money on this side of the water, where the powder is mostly used. It should be said that these accumulations are not, in view of the large requirements, important, and a very large proportion of them are already owned by New York houses, held in expectation of next season's demands, as the crop has been exceedingly light, and prices will be sure to advance when the spring demand sets in.

Camphor is held very largely in second hands, amongst which holders there seems a disposition to sell at figures considerably below manufacturers' prices.

Cubeb Berries.—As yet the demand has not been very large. Supplies are abundant, and, while it is believed that these berries have reached the very bottom as to price, no important advance need be anticipated.

Oil of cubebs, affected solely by the price of the cubeb berries themselves, is lower.

Senna, Tinnevelly variety, has, in the London markets, been bringing somewhat higher prices. Supplies, however, in this country are very large, so that our market is not responding, and quotations remain the same as a month ago. Of the Alexandria variety, stocks being abundant, no change in price can be reported.

Celery Seed.—Stocks are becoming very rapidly exhausted. Demand is active, and an advance of about 1½ cents per pound can be reported.

New York, Oct. 5, 1893.

CHICAGO LETTER.

The latest pharmaceutical sensational outbreak of the local press proves—like all its predecessors—that it is wisest not to rush into print in the daily papers. The *Dispatch* had gone around and tried how many druggists would put up a prescription with an overdose of hydrocyanic acid—and several got caught, and several talked and made it the worse! No matter how inert hydrocyanic acid often becomes on the druggists' shelves, in any controversy with the daily press the latter invariably comes out on top, having the last say. The only respectful way to handle a reporter is to request him to close the door from outside.

The Illinois College has suffered a severe loss: Professor Bastin accepted the call to fill the chair vacated by John M. Maisch. As no loss is without a gain, this loss is possibly the highest compliment that could be tendered publicly to the College; and it is understood that the departing teacher did not accept until he had the assurance that the Philadelphia College would furnish him the same facilities for teaching as he had enjoyed in the Illinois College. We congratulate Philadelphia, and wish Prof. Bastin all prosperity possible.

Has ever a philosopher solved the problem why pharmacists are so apt to drift into buncombe-linguistic contortions? Some of the resolutions presented at the recent pharmaceutical congresses would have done honor to Billy Rice, Bob Hart, or Luke Schoolcraft, and a recent announcement is "chuck full" of efflorescent paradoxes that would carry the prize at the World's Fair—if there was a building big enough in the White City to hold the big, long-winded beauties. The author may well rejoice that Robespierre is dead; in his time such breaks were punished with life-long capital punishment.

But the every-day druggist has "got it" just as bad, if not worse. The other day, on my daily wanderings, I read a card in a drug store: "*Purity is our motto, with an approximate desire to approach the most possible climax of accommodation to our patrons, even those of them who are not our patrons.*" I inquired of the proprietor what the thing meant, and felt relieved at the explanation, hoping that he understood what he said—I did not.

Half an hour later I picked up a prescription blank with this card: "*We assay all our preparations synthetically, reject chemicals not of uniform composition, and all our graduates (?) are thoroughly competent to put up prescriptions carefully.*"

I had to step out into fresh air for breath—but, in all charity, hope the author of the above paragraph felt better after he got through with this child of the muses. I dropped into a neighboring physician's office and was assured that this boastful pharmacy was run by men, not one of whom was able to tell the difference between calomel and corrosive sublimate in chemical reaction. As I said in the start, is this sort of thing catching? Do the boys bring the disease home in their clothes from college, and acquire highfiluteritis by absorption? Where is the Koch to discover the antidote?

JOHN M. MAISCH.

To the Editor of the BULLETIN OF PHARMACY:

John M. Maisch, Professor of Botany and Materia Medica in the Philadelphia College of Pharmacy, was born at Hanau-on-the-Main, Germany, on Jan. 30, 1831, where he was educated. He came to the United States in 1850, and was engaged in the drug business for a number of years in Baltimore, Washington, and Philadelphia. He afterward went to New York, and was for two years Professor of Materia Medica in the New York College of Pharmacy. He was for some time employed in the laboratory of Dr. Squibb in Brooklyn, and afterward in the employ of the United States Government. In 1865 he was elected Permanent Secretary of the American Pharmaceutical Association, and was annually thereafter re elected. In 1866 his connection with the Philadelphia College began, first as Professor of Pharmacy and afterward in the chair which he filled up to the time of his death. In 1871 he became editor of the *American Journal of Pharmacy*, which position he also filled during the remainder of his life. During this time his contributions to science were exceedingly numerous and of a high order. He was editor of "Griffith's Medical Formulary" and of "The National Dispensatory," and author of the well known work on Materia Medica which bears his name and which has run through many editions. Although Professor Maisch's long and busy life was fairly free from disease, he has been for several years quite a sufferer, and a few months since there began to develop a cancer of the stomach and œsophagus which resulted in his death, after prolonged and severe suffering, on the 8th of September. His widow, five sons and two daughters survive him.

Such are the main features of a life which has done more to direct and advance certain important improvements in the practice of modern pharmacy than any other which has been spent in this country. The condition of our drug market and the character of its supplies during the early part of Professor Maisch's professional career is a well but not favorably known page in our pharmaceutical history. To-day, in spite of serious evils still existing, it is probable that we are second to no other country in the ability of our pharmacists to secure the best of everything in this line. This improvement has proceeded hand in hand with the life-work of our deceased friend; and while we accord full credit to his many associate workers, it is he who must ever be regarded as the central figure and the principal factor in this era of progress and in the special field under consideration. The learning of the man alone could never have accomplished these good results. The extent of an influence is often determined by a very small circumstance; and that of Professor Maisch's work is due in great part to the peculiar character of his text-book. With a rare discernment he appreciated the spirit of the time and the requirements of existing conditions, and, with a power of accommodation which he probably could not have displayed in later years, he allowed these, rather than his own mental tendencies, to determine the character of his book. No man who understood Professor Maisch's intellectual character will believe that his tastes led in the direction of abridgements. His Dispensatory work is a better indication of his natural bent. But evidently appreciating that a ponderous work like the Pharmacographia, in view of our national peculiarities and the state of our pharmacy, would be explored by the studious but neglected by the many, he wisely, and fortunately, gave to our people just such a book as they would be willing to use, and he ably made it as serviceable as such a work could well be. The author doubtless had good advisers, but there are few men who, even under strong advice, will subordinate their inclinations to the requirements of existing conditions. The book at first worked on alone, but its happy author lived to see grow up and gather to its aid a great generation of educational influences which he could regard in great measure as his intellectual children. And with his work so fairly accomplished, he passed away.

Heavy as is the loss of the able, kind, and generous adviser, and inexpressibly painful the parting with the loved friend, we seek in higher contemplations for explanation and consolation. An era in pharmacy has begun, as different from that just closed as the latter was from the one which preceded it; and with this era it is doubtful if the genius of the past could successfully and happily have identified himself. Whatever may be the unknown divine economy of the future, we are not deprived of this amelioration of our sorrows in the present. Happy indeed are they who can believe with appreciation that with the new life comes the power to appreciate those things which the increasing dimness of physical perception gradually occludes from us in this. To such the change of state must ever appear as the most merciful provision for its subject.

In the breadth and depth of his learning, Professor Maisch was almost a unique figure in American medical science. In the associated sciences of medicine, considered apart from surgery, probably the only one in which he could not speak with considerable authority was that of practical therapeutics—and probably, also, he knew more of this than his modesty would let appear. The chemist, the practical pharmacist, and the botanist, in their most highly specialized work, have always found in him a keen, accurate and helpful critic, and one always more disposed to advise and correct in private than to seek the perfectly legitimate credit to be secured by a public exposure. The most striking peculiarity of his knowledge was the extent to which he carried details in his memory. Such facts as scholars generally depend for upon books of reference, Professor Maisch was able with surprising frequency to furnish upon demand. This gave great effectiveness to his part in debate, and more than atoned for an almost total lack of oratorical power.

None was so familiar with the history, principles and methods of the American Pharmaceutical Association as Professor Maisch, so long its Permanent Secretary, and scarcely any was better qualified to represent it in correspondence with other similar institutions and with eminent men of science. His conduct of its business at the meetings, totally free from self-assertion or undue personal prominence, was a strong staff for the presiding officer to lean upon and a sure road to straight and speedy accomplishment. Let the Association look where it will to find his substitute, it can hardly save its President-elect from a disability from which his predecessors have been free.

As an editor Dr. Maisch was pure, conscientious, and discriminating, but (it is not unfair to say) so far above the ordinary American reader of pharmaceutical literature as to considerably narrow his possible field of influence. Yet as guardian of his literary and advertising columns, and as editorial critic, he was considerate and gentle and entirely free from that jealousy, narrowness and malevolence which can make an editor and a journal friendless in a personal sense, feared by the weak, detested by the strong, and distrusted by all.

Altogether, considered as Professor, Secretary, Author, Editor, and Scholar, there is absolutely not a man in America who can fitly take the place of the man who is gone.

When we come to speak of the personal qualities of the deceased, we are overcome by recollections of his generosity, kindness, loyalty, and perfect self-forgetfulness. Possessed of a moral courage that was perfect, he would without a follower take his stand as calmly and as immovably as if he were the leader of a host.

In his family relations the writer saw but little of him, but evidence is not lacking that he was a model husband and father, and that the domestic trials and sorrows of which he had his share only served to refine his spirit and to perfect his character.

H. H. Rusby.

DR. HAMMOND AND THE MEDICAL PROFESSION.

From the Columns of the *New York Medical Journal.*

Dear Sir:—My respect for and my sympathy with the medical profession in America, and my knowledge of their sentiments, forbid me to regard Dr. William A. Hammond as their representative in the defense which he puts forward in the columns of the *New York Medical Journal,* Sept. 16th, of the practices of publicity-hunting by newspaper interviews, newspaper portraits, and the use of and traffic in secret preparations, etc. I have in the course of recent travel received personally from many hundreds of prominent and representative physicians in Milwaukee, Washington, Boston, Philadelphia, Chicago, Cincinnati, Detroit, and from all parts of the United States, their cordial congratulations on the tone and substance of the addresses which I had the honor to deliver at Milwaukee and Washington. I have been assured on all hands of the entire sympathy of the great body of the profession in the views therein laid down and discussed. I should have been surprised, however, and perhaps disappointed, if they had not elicited some expression of pain and anger from certain quarters. "Let the galled jade wince; the withers" of the great American medical profession are, I am assured, "unwrung." Your correspondent, in an access of ethical agnosticism, assumes that the enumeration of ethical data as to medical conduct was, or could be, a reproval direct or implied to the medical profession of America. That is an unmerited insult which he addresses to his profession, and indicates a view which I apprehend to be special to himself. Let him enjoy the practices which he defends; I do not think he is likely to find much support or sympathy in them from medical men in good standing. His account of the position of the medical men in Great Britain is a parody undeserving of serious notice. So, as to myself, whom he favors with some personal abuse, I have been avowedly the scientific adviser to, but it is untrue that I have ever held any of the stock of, the Apollinaris Water Company. As to his other trivialities, I was the guest of the Pan-American Medical Congress, and on entering its headquarters I registered in ceremonious form.

I have no desire to be honored amongst "the Pan-Anglicans," "the Loyal Legion," the "Fat Men of America," and the other objects of lay interest, with whom Dr. Hammond puts medical men on a par, and I do not agree with him that medical men should desire to share with them the honor of newspaper notoriety. I do not believe any details of my medical career have ever appeared in any lay paper.

I suggest that it might be desirable for Dr. Hammond to rely less upon his imagination for his facts, and not to assume to speak for a profession from which he has no sort of mandate, and which would, I am well assured, repudiate, if consulted, both his advocacy and his methods of action and of expression.

I am assured that he utterly misrepresents that profession both in his statement of principles which he ascribes to it, and in his abuse of myself. I am, sir,

Yours faithfully,

Ernest Hart.

To the Editor of the Bulletin of Pharmacy:

Please give the following the same publicity as was given to a letter by Mr. L. A. Harding in your July issue:

⁂

AN OPEN LETTER TO L. A. HARDING, B.C., PH.D., OF FERGUS FALLS, MINN.

The July number of the Bulletin of Pharmacy publishes an epitome of a paper on Pepsin read by you before the Minnesota State Pharmaceutical Association, in which you state that you tested a number of commercial pepsins, among them a sample of Cudahy's 1:2500 scale pepsin, which tested only 1:1200 instead of 1:2500 as claimed by the manufacturer. Such a sweeping verdict as this, given with such positiveness, is liable to confuse the unsophisticated reader.

With every package of our pepsin is sent full explanation of our method of testing, as adopted Jan. 4, 1893. You certainly have not used it, otherwise you would have arrived at the same results as ourselves.

One grain of our 1:2500 pepsin dissolves 2,500 grains of albumen, under the conditions of our test. This is a fact beyond a doubt. You must have tested under such conditions as to diminish the proteolytic power fully 50 per cent. Why you have done so, and details of your test, we do not know, as you refuse to give satisfactory answer to our letters.

You have a right to use any test you choose so long as it may be for your own pleasure and pastime, but when you not only read the results of your experiments before a body of pharmacists, but also publish the results of such test, it becomes your duty beyond a doubt to show that you have used the manufacturer's test and have found it impossible to obtain such results as he claims for his pepsin, or that you prefer not to use it, showing plainly in what way it is faulty, or whether it is against the general usage, or whether it is founded on scientific principles. If you cannot show such proof, your tests are open to question.

Nearly all of the manufacturers of pepsin in this country use the U. S. P. test modified, for reasons which we will explain. The present U. S. P. test states that one part of pepsin dissolved in 500 parts water acidulated with 7.5 parts hydrochloric acid and mixed with 50 parts egg albumen, will form a mixture which on being kept at a temperature of 100° to 104° F. should become a slightly opalescent solution in five or six hours. The U. S. P. test does not say how long the egg shall be boiled, whether the albumen is to be used in one lump or comminuted in some way, whether the bottles are to be shaken or left undisturbed for the whole time. The manufacturers generally interpret the wording of the U. S. P. test as follows: The eggs are kept in boiling water for 15 minutes; the albumen is rubbed through a No. 30 sieve and the bottle shaken every five minutes, time 6 hours.

But regarding the comminution of the eggs, there are different opinions. The New York Board of Health holds that the albumen be used in one lump (see *Druggists' Circular*, July, 1892). On the other hand, the National Dispensatory by Stille & Maisch adds to the words "hard boiled egg albumen," "in thin shavings."

We have tested a number of pepsins, American and foreign, using 10.0 of albumen in *one lump*, and found that none of the samples would stand the test under these circumstances. We also used the albumen in thin slices, and found that few pepsins would dissolve more than 100 times their weight.

A chemist using the pharmacopœial test with the albumen in one lump or in thin shavings would have to declare that all the claims of pepsin manufacturers were gross exaggerations and bold impositions.

Another important factor in pepsin testing is the amount of acid. Some manufacturers of pepsin use 0.48 per cent. acid as directed by the U. S. P., others use 0.3 per cent., and we 0.2 per cent. In accordance with the views of the majority of physiologists, 0.2-per-cent. solution is not only the average amount of acid in the healthy human stomach, but pepsin shows the strongest solvent power on albumen when dissolved in acid of such strength. Using less than 0.2 per cent or more than 0.2 per cent. invariably decreases the activity of the pepsin.

An interesting table on page 130 in Roberts' "Digestion and Diet" gives figures which substantially confirm our experiments.

Since our letter was written, the new revised edition of the Pharmacopœia has come out of press, and the test therein established as the official test is substantially the test we have had in use the past year, and which was adopted as our standard the 4th of January, 1893.

Yours truly,

THE CUDAHY PHARMACEUTICAL CO.

South Omaha, Neb.

GLAD OF IT.

NASHVILLE, Oct. 4, 1893.

To the Editor of the BULLETIN OF PHARMACY:

At the meeting of the Commercial Section of the A. P. A., a resolution was offered which, if adopted, would have pronounced all patent medicines unscientific preparations. But the same class of medicines in the guise of sarsaparillas, cough medicines, corn cures, etc., were to be still considered good and true scientific preparations. I am thankful that this resolution was tabled. If it is wrong for a doctor to dispense medicines, it is worse for a pharmacist to prescribe—as the pharmacist cannot possibly make a diagnosis, and does well if he knows the difference between the symptoms of piles and diphtheria. If the pharmacist should conclude to make his own patent medicines, how would it be known to the public except by advertising? and on this point many pharmacists entertain grave doubts as to the ethical side of the question.

Could a truly scientific pharmacist follow the example set by an advertising manufacturer and flood his family neighborhood with glaring boasts of his "colorless solution of astringents, warranted to restore peace in any family inside of three days, stop any leak without calling in a plumber," and then accompany this blow with a life-size picture of a blunt-pointed shotgun? No. Sell your patent medicines, if you please; put up your own nostrums, if you please; but do not degrade the A. P. A. by coercing it to sanction the traffic.

Yours,

DECENCY IN ADVERTISING.

WANTED—BACK NUMBERS OF THE BULLETIN OF PHARMACY.

To the Readers of THE BULLETIN OF PHARMACY:

I wish to secure at the earliest possible moment the following back numbers of THE BULLETIN: One copy of the September, 1888, issue, and one copy each of the following numbers: November and December, 1889. Anyone in position to supply any or all of these numbers will please at once address

GEO. S. DAVIS,
Medical Publisher,
Box 470, Detroit, Mich.

A New Illustrated Dictionary of Medicine, Biology, and Collateral Sciences.

Dr. George M. Gould, already well known as the editor of two small medical dictionaries, has now about ready an unabridged, exhaustive work of the same class, upon which he and a corps of able assistants have been uninterruptedly engaged for several years.

The feature that will attract immediate attention is the large number of fine illustrations that have been included, many of which—as, for instance, the series of over fifty of the bacteria—have been drawn and engraved especially for the work. Every scientific-minded physician will also be glad to have defined several thousand commonly used terms in biology, chemistry, etc.

The chief point, however, upon which the editor relies for the success of his book, is the unique epitomization of old and new knowledge. It contains a far larger number of words than any other one-volume medical lexicon. It is a new book, not a revision of the older volume. The pronunciation, etymology, definition, illustration, and logical groupings of each word are given. There has never been such a gathering of new words from the living literature of the day. It is especially rich in tabular matter, a method of presentation that focuses, as it were, a whole subject so as to be understood at a glance.

The latest spelling of certain terms, as adopted by various scientific bodies and authorities, has been included, as well as those words classed as obsolete by some editors but still used largely in the literature of to-day, and the omission of which in any work aiming to be complete would make it unreliable as an exhaustive work of reference.

The publishers, P. Blakiston, Son & Co., Philadelphia, announce that, notwithstanding the large outlay necessary to its production on such an elaborate plan, the price will be no higher than that of the usual medical text-book.

The Popular Science Monthly. New York: D. Appleton & Company. Fifty cents a number, $5 a year.

"Electricity at the World's Fair" opens the October number of the *Popular Science Monthly.* The subject is a fascinating one, and Mr. Charles M. Lungren, who writes the article, has given faithful descriptions of the enormous generators, the marvelous electric fountains, the electric railway and launches in operation, and other wonders of the electrical exhibit. Objects of special interest are shown in pictures. A less picturesque subject though of more general concern has been chosen by Frederik A. Fernald, who describes the exhibits relating to the daily life and labors of the home, under the title "Household Arts at the World's Fair." An account of the system of caring for the insane recently adopted by the State of New York is given by Dr. Andrew Macfarlane, together with some suggestions for improved care of curable patients, under the title "The Duty of the State to the Insane." The Fish Commissioner for the Cossack district of Russia, Dr. Nicolas Borodine, contributes a notably interesting account of the Ural Cossacks and their fisheries, with illustrations. Another fully illustrated article, by Henry L. Clarke, describes a characteristic Southwestern plant group, embracing those monarchs of the American desert, the agaves (century plants), cacti, and yuccas. Illustrations are used also by John C. Branner in describing the lip and ear ornaments of the Botocudus. In "Criminal Festivals" M. Guillaume Ferrero tells how murder, cannibalism, etc., persist in tribal observances long after their general practice has been given up. Prof. James McK. Cattell writes on the progress of psychology, and foretells some of the practical applications of this science. The problem of colored audition is treated by M. Alfred Binet. "Some Characteristics of Northwestern Indians" and a "Sketch of Werner von Siemens" complete the body of the magazine. In the Editor's Table the subjects considered are: Pernicious charities, the American Association meeting, and the new Index to the first forty volumes of the *Monthly.*

Scribner's.

"The Northwest Mounted Police of Canada," an article by J. G. A. Creighton, is replete with interest, and emphasizes the fact that a few brave men, thoroughly drilled and disciplined, effectually check disturbances arising amongst the Indians and settlers scattered over the vast territory which is virtually the "beat" of this admirable force. The illustrations, as usual, are excellent.

In "The Man of Letters as a Man of Business," by W. D. Howells, the author says: "I think that every man ought to work for his living, without exception, and that when he has once avouched his willingness to work, society should provide him with work and warrant him a living. I do not think that any man ought to live by an art. A man's art should be his privilege when he has proven his fitness and exercised it, and has otherwise earned his daily bread, and its results should be free to all." The paper is as interesting as its opening sentence indicates, and we would commend it to anyone interested in literature and art.

"Glimpses of the French Illustrators," the first of a series of papers to be continued, "Historic Houses of Washington," "Scott's Voyage in the Lighthouse Yacht," "The Art of the White City," and the continuation of "The Copperhead," which, by the bye, is to be concluded in the November issue, make a very readable number.

McClure's. Price only 15 cents.

The October number of *McClure's Magazine* contains so much bright, readable matter that after an evening's enjoyment of it you will lay it down, and, like Oliver Twist, of immortal memory, ask for more.

A character sketch of Thomas B. Reed, of Maine, will be read with interest by all good Republicans, whilst Democrats may find half an hour pass very pleasantly in his company, first as a boy, and afterwards as the "Ex-Czar."

The article upon the Harvard Psychological Laboratory should be carefully read by every chemist and pharmacist.

"Mountaineering Adventure," illustrated by views of Alpine scenery, is exceptionally well written. Doubly interesting will it be to one who has already rambled over that "playground of Europe."

"Lord Dunraven's Career as a War Correspondent, Yachtsman, and Public Man," comes very *apropos*, as we have just witnessed the great race between his English yacht and the American "Vigilant." The article is illustrated with portraits of Lord and Lady Dunraven, of the designer and captain of the "Valkyrie," and with pictures of Lord Dunraven's castles in Ireland and Wales.

Human Documents still run on, and we must not forget to ask you in no wise to omit reading Walter Besant's pathetic story, "A Splendid Time—Ahead," and "The Spire of St. Stephens," a short tale of absorbing interest for young or old.

The Humanitarian, 1893, Volume 3, No. 1. Sonnenschein & Co., Paternoster Square, London, E. C.

This magazine of eight pages comes to us a novelty in this particular field of literature. Its scope is such that it will find a place in any household. Although it is only in its thirteenth month, this journal has already been greeted on both sides of the Atlantic with such expressions of sympathy and encouragement that this the third volume offers material improvement both as to size and character of text. The present number contains, among other interesting articles: "Alchemy of Maternity;" "Mediæval Medicine;" "Anthropometrical Descriptions—A New Method of Determining Individual Identity;" "The Master of the Dark World;" "To the Third and Fourth Generation"—a serial story by Walter Besant. There are also pages devoted to reviews, and notes and comments; in the former we note a very careful analysis of drunkenness and of the character of so-called "temperance" literature, incidental upon a review of a volume on this subject by Geo. K. Wilson, M.B., C.M.

As an example of what may be done with the English language, an announcement in an exchange furnishes the most startling evidence: "Mrs. Blank will lecture at —— hall Sunday afternoon; subject, 'From Heaven to Hell.' The elevator will run from 2 to 4 P.M."—*Cedar Rapids Gazette.*

Artemus Ward was some time ago traveling on a slow-going Southern road. When the conductor was punching his ticket, Artemus remarked: "Does this railroad allow passengers to give it advice, if they do so in a respectful manner?" The conductor replied in gruff tones that he guessed so. "Well," Artemus went on, "it occurred to me it would be well to detach the cowcatcher from in front of the engine and hitch it to the rear of the train. For, you see, we are not liable to overtake a cow; but what's to prevent a cow strolling into this car and biting a passenger?"—*New York Railroad Men.*

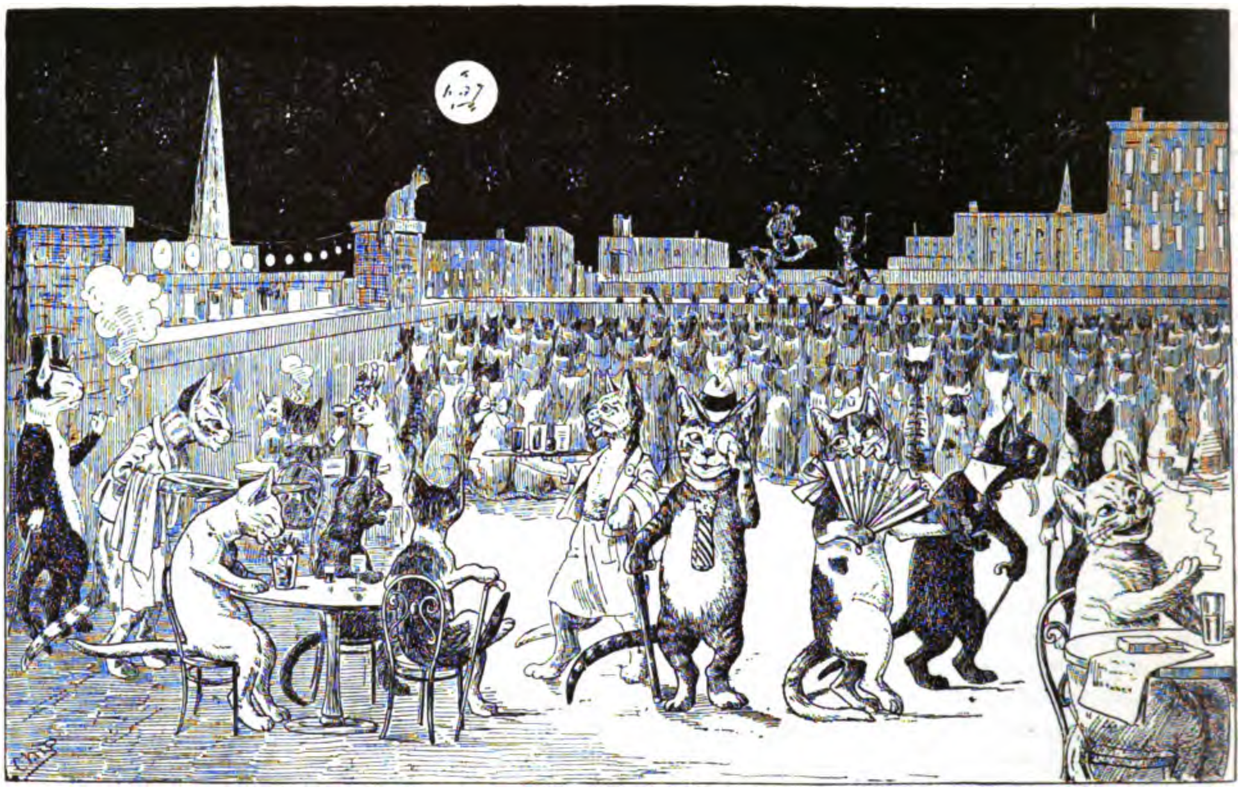
The Boston Infant (pushing back its high chair and discarding gum-ring and rattle): My dear parents, this thing must stop. I am now ten months old and quite competent to feel disgrace. I have just heard my father say, 'Pass them biscuit, please.' Is this not true?

The Boston Mother (plaintively): Yes, dear; but——

The Boston Infant (firmly): But me no buts. When you married a Chicago man you committed a deplorable error. It is no longer endurable. I desire to be placed in charge of my maternal grandmother.—*Pittsburg Bulletin.*

LAMENTABLE LACK OF ENTERPRISE.

"Let me have three fingers of whiskey," he said to the clerk of a drug store in a Kansas town. "I can't," replied the clerk, who did not know the customer; "this is a Prohibition State." "I can't get a drink of whiskey, eh?" "No, sir, not without a physician's prescription, when it is to be used as a medicine." "Is there no emergency at all in which you would be permitted to dispense a small quantity of whiskey without that formality—a case of life and death, for instance?" "Why, yes," replied the clerk, "I suppose if a man were to be bitten by a rattlesnake and it would require some time to go to a doctor and get a prescription, in that case it might be allowable to give him whiskey." "Do you know where I could find a snake?" "Why, no," replied the clerk, greatly surprised at the query. "Well," commented the thirsty one, with a great deal of disgust in his tone, "it seems to me that if this drug store had any enterprise it would keep a rattlesnake on hand for use in cases of emergency."—*Harper's Magazine.*



THE ORIGINAL ROOF GARDEN.

—*Life.*

Schoolmaster: Now Robert, can you tell me how many pints there are in a quart?

Publican's Hopeful: Why, yes, sir. One and a half, and the froth.—*American Analyst.*

Mrs. Watts: So you have been playing poker again, have you? I have a great notion to go home to father.

Mr. Watts: Better stay where you are. The old man lost all he had and all he could borrow last night.—*Indianapolis Journal.*

A BACHELORS' ASSOCIATION.

Should the bachelor druggists in any city, county, or State ever desire to formulate an association for the promotion of celibacy, the following constitution and by-laws, modeled after the constitution and by-laws of the Vanderbilt University Bachelors' Association, might be adopted:

CONSTITUTION.

ARTICLE I.—NAME.

This organization shall be known as the (city, county, or State) Bachelor-Druggists' Association.

ARTICLE II.—OBJECT.

It shall be the object of this Association to promote celibacy, to console and assist those who have been crossed in love, and to warn and protect the unwary against the snares of Cupid.

ARTICLE III.—MOTTO.

The motto of this Association shall be: "It is better to dwell in the corner of a house-top than with a brawling woman in a wide house."

ARTICLE IV.—MEMBERSHIP.

Any druggist of this (city, county, or State) shall be eligible to membership in this Association, provided he have the following qualifications:

1st. He shall be at least three score and ten years old.

2d. He shall have wooed not less than three fair maidens, and shall have been kicked each time not less than three times as high as the nearest church-steeple. If any one of said maidens was over forty years of age at the time of said wooing, it shall be necessary that said wooer be kicked only twice as high as the aforesaid church-steeple.

ARTICLE V.—OFFICERS AND THEIR DUTIES.

Section 1. The officers of this Association shall be President, Vice-President, Secretary, and Treasurer.

Sec. 2. It shall be the duty of the President to preside at all meetings, and to see that each member of the

Association keep holy and inviolate the oath hereinafter provided for. If at any time it come to the knowledge of the President that any member is, or has been, casting amorous glances on any maiden, fair or otherwise; or if by any dudishness of dress or behavior, or otherwise, he betray any tendency to fall from grace, it shall be the duty of the President to give said member a curtain lecture on the subject of feminine infidelity, to read to him three times over Longfellow's "Beware, beware—she is fooling thee," and to direct each member of the Association to remember in his prayers his unwary and misguided brother.

Sec. 3. It shall be the duty of the Vice-President to preside in the absence of the President, and to carry on original research in regard to celibacy.

ARTICLE VI.—AMENDMENTS.

The constitution of this Association cannot be amended by any means known to man. It is as immutable as the laws of the Medes and Persians.

BY-LAWS.

ARTICLE I.—MEETINGS.

The regular meetings of this Association shall be held on the first day of April of each year.

ARTICLE II.—QUORUM.

Any one member, if he be present, shall constitute a quorum, but a less number may adjourn to a specified time.

ARTICLE III.—ELECTION OF MEMBERS.

Applicants for membership shall undergo a probation of six months previous to being voted on. Ten black balls shall reject the applicant.

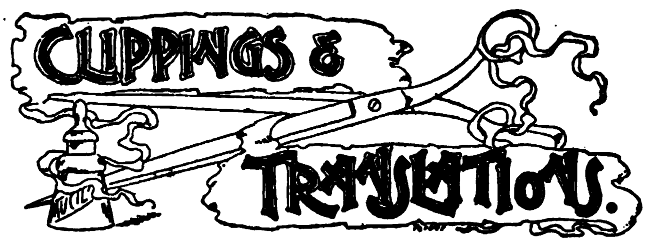
ARTICLE IV.—INITIATION.

After having been duly elected, the initiate shall be led before the President, and kneeling down shall place his right hand over his heart—*i. e.*, if he have a heart. If he have none, then he shall place his right thumb to the end of his nose, extending the fingers of the right hand. He shall then place his left thumb to his right little finger, extending the fingers of the left hand. Then moving the fingers of each hand alternately to the one side and then to the other, and keeping his eyes steadfastly fixed on those of the President, he shall take the following sacred and binding oath: "In the presence of this august assemblage of bachelors, and in the name of Sir Roger de Coverly and the Continental Congress, I do hereby solemnly swear to obey and uphold the Salic law, and never submit to petticoat government. If I should ever depart from this, my steadfast purpose, I hope I may die of the measles. I hope the great American Eagle may swoop down and carry away my carcass and drop it in the Gulf of Mexico, where it may become the food of sharks and alligators."

The President shall then dub the initiate a true and loyal bachelor.

ARTICLE V.—AMENDMENTS.

The by-laws of this Association shall not be amended except by consent of the Legislature countersigned by the Governor.



A Chat with Prof. H. H. Rusby.

Under the above head the *Chemist and Druggist* has a long interview with our bright American traveler, from which we extract the following:

"I was born and bred on a farm in the State of New Jersey," said the Doctor, "and from my childhood was exceedingly fond of botany. So when I grew up and found that I wasn't built for farm life, I made up my mind to look for an opportunity of doing some work that would bring me into notice in the botanical world. I had already acquired a fair theoretical and practical knowledge of the science, and when I obtained a chance of going to the Rocky Mountains for the Smithsonian Institution I was not slow in seizing it. That was in 1880.

"There was no pay. The Smithsonian people never pay their investigators on trips such as mine was. They want to lay hold of the young enthusiast, not the calculating man of experience. But I received introductions to all the forts and stations in the district which I was to explore (we were yet in the pre-Pacific Railroad era, and the section I had to traverse was pretty rough), enabling me to get food and other elementary requirements at these posts, and entitling me to the protection and assistance of the officials. That was my first botanical expedition, and, being quite young and in the best of health, I enjoyed the life immensely. After an absence of fifteen months, chiefly spent in the Territories of New Mexico and Arizona, I returned to New York, laden with botanical specimens and considerably richer in experience, though in nothing else of a negotiable character. Then I went west again, and accidentally fell in with Mr. Davis, of Parke, Davis & Co., Detroit, the great pharmaceutical manufacturers. I told him of my tour, and he proposed that I go through the same district again as the paid representative of his firm, to prospect for anything of economic value that might turn up—the results of my trip, whatever they might be, to go to the firm."

"You mean that you were to collect supplies of known medicinal plants, and prospect for new botanical products that might be of medicinal or other economic value?"

"Quite so. The firm knew that I was acquainted with the flora of the Rockies, and they took the chance of getting any good out of the expedition. I started on my trip early in 1883, and was away the better part of the year."

"Was the journey successful?" asked our man, taking advantage of the momentary pause in the narrative.

"It was a dead failure, sir," responded Dr. Rusby, frankly. "I couldn't find any drugs which could be profitably collected, and when I got back to Detroit I was so ashamed and disheartened that I could hardly rouse myself to go near the laboratory again. But Mr. Davis was very kind. He put it all down to sheer ill-luck, which it was, and he just sponged the trip out, as it were, from my record with his firm. 'We are sure you've done your best,' said he, 'and we don't blame you one bit.' I said I intended to study medicine, and he approved of that idea, and even offered to employ me again after I had obtained my degree. I passed my medical examination at the University Medical College of New York in 1884, and in 1885 I went out on another mission for P., D. & Co., this time to Bolivia and Chili, and as a result brought Pichi into commerce—pichi, *Fabiana imbricata*, the flower-stems and leaves of which are now being used a great deal in certain affections of the bladder. The drug is usually given as a fluid extract. The pichi shrub grows wild in the Chilian Andes, and has been used by the Chilians time out of mind. * * * The drug has now been acclimatized in several countries, but the credit of introducing pichi belongs to P., D. & Co. I also brought over Cocillana, which has obtained considerable reputation in medicine as a substitute for ipecac."

"Did you see any ipecacuanha grow?"

"I did not. When I was on the Rio Itenez, I fell in with a party named Toto, a kind of half-breed Spaniard and a big man of that section, who, a few seasons back, used to employ as many as 120 peons (laborers) gathering ipecac for him. But when I was there the price of rubber was so high that it did not pay to put men to ipecac-gathering. Of the two kinds of labor, rubber-collecting is by far the pleasanter work. The peon only has to tap the rubber-tree and the juice exudes; but in ipecac-digging, nose, eyes, and hands are irritated by the exceedingly pungent, acrid juice of the herb. There are many people whom even the pungent dust of dried ipecac distresses greatly, and you can imagine what it is to have to uproot the fresh herb under a tropical climate. When I asked Toto's men why they did not collect any more 'poaya' they would say, 'Ah, Señor, it makes the fingers ache. We don't like it.' At the present time rubber is much lower again, and that may account for the heavy consignments of ipecac that have been received here lately. I do not think there is any danger of extermination of the root. It grows too readily, and you must not forget that the interior of Bolivia and Brazil is practically unknown, even to the natives, excepting along the river-banks. When you get two or three days' journey away from the river, you are in a perfectly uninhabited wilderness.

"The peons are practically slaves, and are certainly not treated any better than negroes used to be on our own plantations. According to the law, there is no slavery in Bolivia; but in these out-of-way districts each master is a law unto himself, and keeps the peons as bondsmen as long as he likes by the simple expedient of always taking care to keep them in his debt, for no workman is allowed to leave his master so long as he owes him anything. I have seen men and women beaten there within an inch of their lives for trifling offenses.

"An important event since my journey has been the formation in the United States of a company to develop the natural resources of Bolivia. No druggists are connected with it so far as I am aware, but Earie Bros. & Flint, the 'rubber-kings,' have a considerable stake in it. The company has just sent nine or ten men to Bolivia to survey the ground.

"After leaving Bolivia I made my way as rapidly as possible to Pará, at the mouth of the Amazon, first pushing on by mule to the river Mapiri. There we halted until the water had risen sufficiently to float a raft, and by means of that conveyance we got as far as Keyes, upon the Beni. There the river becomes deep enough for navigation by boat. At the junction of the Mamore larger boats were secured, and in this way we journeyed on until we secured an Amazon steamboat. Eleven months were consumed in the journey. Throughout the whole journey I was accompanied by Mr. Cirilo F. Kiernan, a true cosmopolite, educated in France and Germany, and, in spite of his half-Spanish name, a British subject, having been born in British India. Two American cowboys joined us at Keyes. They had killed so many people in Dakota and Texas that they had thought it advisable to transfer the scene of their activity to Bolivia. But the old Adam was too strong in them, and, although the Bolivians are not fastidious in the matter of an occasional garroting or knifing, the cowboys exceeded the bounds of permissible lawlessness to such an extent that a portion of the Bolivian army was directed to drive them into the wilderness. The cowboys were hunted from fastness to fastness, until at last there was nothing for them but to cross the continent to the Atlantic. They wished to go to Panama, the final refuge of all the scum of America, and I agreed with them to help them to that spot if they would assist us across the continent."

"But were you not afraid to trust yourself and your possessions to such men?"

"Not at all. You must remember that I had spent three years among this class of men in Arizona and New Mexico, and knew pretty well how to take them. They are relentless, fearless, and heartless as foes, but they are not cowardly assassins. One of them, Jim, who claimed a total of more than sixty victims, boasted that he had always given the other man the first shot. Furthermore, these men are generally very straightforward in carrying out a fairly arranged contract, especially when given a free rein and placed upon their honor from the start. I regret to say that Jim succumbed to the climate and was buried at Manaos, and I collapsed immediately on reaching Pará, at the mouth of the Amazon, and got out to sea barely in time to save my life."

"How about the scientific results?"

"They were really very great. More than 35,000 specimens of plants have been distributed, besides a collection of over 400 birds, thirteen of them new species, and more than 200 collected outside of their previously recorded geographical range. The miscellaneous collections were also considerable.

"When I left Bolivia I appointed a collector, Miguel Bang, who had been taught gardening at Kew, to continue my work. Sr. Bang periodically sends me consignments, and up to the present we have determined 1,780 species of Bolivian plants. * * *"—*Indiana Pharmacist.*

Spectrum Analysis.—In view of the general scientific interest which attaches to the striking and beautiful phenomena of spectrum analysis, and of the important chemical bearings which they have assumed, we reproduce in the following an interesting discussion of this subject by Dr. Miethe, as published in *Prometheus*. Those of our readers who have seen specimens of the handiwork of this learned and charming writer will not begrudge the space which we devote to the presentation of a not too familiar theme. The most important principles of spectro-analytical investigation are touched upon, although naturally a discussion of details is out of the question.

As is generally known, white light consists of a number of very different forms of light, which, as a result of varying length of wave, produce the sensation of diverse colors upon the eye. With the aid of a prism or of reflecting surfaces of fine, regular structure, we are enabled to separate the various kinds of light from one another. Now, spectrum analysis is the science which enables us to draw conclusions respecting the nature of a substance or the nature of the light shining upon it, from the character of the light proceeding from a radiant or reflecting body. If, for example, we heat a piece of metal, with the aid of an electrical current, to a white heat, it sends out, when its temperature has become sufficiently high, light-waves of all lengths, so that a prism, brought into requisition, will exhibit a continuous band of color when the object is perceived through a slit. That band of color is nothing less than an unbroken series of individual decomposition-images arranged above one another in layers. Let us now suppose that some kind of a medium is interposed between the source of the light and the slit, and that this medium absorbs certain kinds of light—for example, a blue cobalt glass: certain parts of the colored band will be absorbed, and the latter no longer presents a continuous appearance, but dark zones will appear as though drawn through it. In warming any solid body gradually, the spectro-analytical phenomenon is always the same, and in general is not dependent upon the nature of the body. In warming the iron, copper or glass through all the stages of red heat up to white heat, a continuous color band always results which, at the lowest temperature, contains first red rays alone, then gradually the yellow, green, blue, and violet. Accordingly, when we observe in the case of any self-illuminating or light-radiating body a continuous spectrum, we may infer at once that it consists of solid, glowing substance, and from the greater or less abundance of more refrangible rays we will be enabled to draw some inference respecting its temperature. Thus, the light of the finely divided, glowing carbon contained in the flame of illuminating gas, which is, relatively speaking, not very hot, is very poor in violet rays, and that of the carbon parts which are heated to an extreme white heat in the electric arc is very rich in violet rays.

Very different phenomena present themselves in the spectroscope when we observe a glowing gaseous substance. For example, an electric current of high tension is passed through a Geissler tube, filled with hydrogen; we obtain through the prism, not a continuous band of color, but rather a series of separate color lines which stand forth from a dark background distinctly pronounced. The number of these lines varies generally with the tension of the electric current, or—what is the same thing—with the temperature and also the pressure to which the gas is subjected, so that with ascending temperature new lines and groups of lines are added to the tableau. Here, likewise, the spectrum of a gas renders possible the drawing of certain deductions respecting its temperature and the pressure to which it is subjected.

Now since the spectra of all gaseous substances vary each from the others, but nevertheless contain certain characteristic groups of lines corresponding to each temperature and each pressure for every single substance, spectroscopic investigation enables us to distinguish the gaseous or vaporized bodies from one another. If we see any spectrum consisting of bright lines, on the basis of existing tableaux we can straightway form a conclusion respecting the nature of the glowing gas, and deduce not a little with regard to its approximate temperature and its pressure.

But not only can we determine the chemical constitution and the physical conditions surrounding the glowing body with the aid of spectrum analysis, but we also are in a position to answer certain other questions which are of the utmost importance in the physical study of the planets. An example will quickly illustrate the foregoing. When we observe through a prism the continuous spectrum of an electric arc light, owing its origin to the white-glowing solid carbon, and then interpose between the prism and the electric light an alcohol flame in which we develop vapors of sodium, we obtain projected successively the continuous spectrum of the glowing carbon and the line spectrum of the sodium gas. It would be assumed that under the circumstances the bright lines of the sodium gas would be projected bright upon the continuous spectrum. This, however, is not the case; on the contrary, the sodium lines appear in the form of dark lines upon the bright spectrum of the electric arc light. This fact is explained by Kirchhoff's law, which declares that every gaseous body absorbs light of the same color which it radiates itself. Hence the blue of glowing sodium vapor, which yields itself a weak spectrum of lines, absorbs the corresponding color tones from the spectrum of the electric light, so that now the sodium lines appear dark on the bright background. Applying this experience to the spectra of the planets, it follows that in every case where a continuous spectrum of black, sharp lines appears to be traversed by other lines, an inner molten or white-glowing solid nucleus is surrounded by a glowing gaseous envelope, whose chemical composition and temperature are indicated by the black absorption lines.

We need not here dwell upon the modifications of these rays in actual experience, or how under certain circumstances, as the result of the extraordinary high temperature of a glowing mass of gas, bright lines may appear to issue from a relatively cool glowing background. We briefly mention the possibility of such a thing.

Other very important facts with respect to the physical conditions of any radiating body we obtain by virtue of the fact that certain combinations of elements yield very different spectra from those of the pure elements. Thus, for example, the spectrum of a hydrocarbon reveals a different form from that of the carbon and oxygen, and shows neither the lines of the one nor those of the other substance. The spectrum of cupric oxide is different from the spectrum of metallic copper. Now such combinations of hydrocarbons and metallic oxides are associated with certain temperatures. When the heat reaches a certain degree, a combination can no longer exist. It is decomposed into its constituents. Accordingly, when from any planetary body we obtain spectra—as, for example, from the comets—which belong in the group of the carbonates, we may draw conclusions respecting the conditions of temperature and pressure which prevail on that cosmic body.

Aside from these chemico-physical facts taught us by spectrum analysis of the stars, it comprehends another broad field which seems to have nothing in common with the foregoing. This is the domain of the phenomena of movement. Spectrum analysis enables us to ascertain whether a body is moving in the direction of the line of vision—that is, directly in that direction in respect to which the telescope leaves us in the lurch. Concerning this point, which has recently assumed the utmost importance, mention has been made repeatedly in scientific journals.

We may truthfully say that spectrum analysis has become the most important of all the modern astrophysical modes of investigation, and that the information which we have thus obtained is so manifold that fifty years ago it would have been considered impossible ever to gather such a fund of knowledge. It forms one of the most beautiful evidences in support of the principle that at no time should we look upon the solution of any question, however difficult, as absolutely hopeless. What seems impossible and even ridiculous to-day, may become the accomplishment of to-morrow, and these very achievements which open new domains of investigation and fall into the lap of science with unexpected bounty are the factors which have rendered science so attractive and mysterious in the eyes of the general public. As suddenly as they often seem to make their appearance, quite as gradually have they in reality been developed, and this applies likewise to spectrum analysis. Though the investigations of Kirchhoff and Bunsen apparently opened an entirely new world, it must not be forgotten that preparation had been made for them for half a century, and that the apparently unimportant observations of Fraunhofer and Wollaston in reality contained the germ of that great discovery which represents one of the triumphs of modern investigation.

Antinervine, a new headache remedy, was discovered, after an analysis, to be merely a mechanical mixture of 50 per cent. acetanilid, 25 per cent. salicylic acid, and 25 per cent. bromide of ammonia.

Pharmaceutical Meetings.—The Virginia Board of Pharmacy will meet in Lynchburg Oct. 23d. E. R. Beckwith, Secretary, Petersburg, Va.

The South Carolina Pharmaceutical Association meets Nov. 16th at Charleston, S. C.

The Pharmaceutical Association of Maryland convenes in Baltimore Nov. 10th.

The next meeting of the California State Pharmaceutical Association will be held in San Francisco on the second Thursday in November.

At the last quarterly meeting of the New Hampshire Commissioners of Pharmacy the following passed a successful examination: J. Arthur Bean, Concord; Harry G. Davis, Dover; Wilfred Parent, Simcook.

At a late meeting of the Maine State Board of Pharmacy fifteen applicants were examined, and only one passed. The Commissioners of the Maine State Board of Pharmacy evidently intend to see to it that in Maine, at least, only those men in whom implicit confidence may be placed shall enter upon the responsible duties of the pharmacist.

The Illinois Board of Pharmacy at its August meeting registered by examination the following: C. H. Avery, H. B. Hunter, F. W. Mechener, L. Merriman, I. Platt, of Chicago; and L. A. Schmidt, Rock Island. The following were registered as assistant pharmacists: O. C. Ebinger, C. F. Fisher, Miss Nan G. Gladish, H. H. Hubbard, P. C. Huebner, C. O. Ingersoll, J. R. Mountain, P. K. Moore, I. L. Quales, W. M. Robb, A. O. Solberg, L. F. Strehlke, Mrs. Addie M. Tipton, A. W. Williams, of Chicago; H. H. Bartholomen, Quincy; J. A. Lyon, Danville; A. G. Volz, Arlington Heights; and F. B. Wynkoop, Wauconda.

At the Sept. 6th meeting of the Kansas State Board of Pharmacy the following were granted certificates as registered pharmacists: A. E. Barnes, Topeka; E. G. Armsby, Atchison; G. F. St. John, Independence; G. L. Brown, Idana; A. G. Sexton, Clyde; W. J. Cattell, Tescott; D. Deford, Ottawa; E. E. Ransopher, Clyde; John Senfert, Barnes; N. E. Ferguson, Winfield; G. H. Lawton, Atchison; L. I. Kendall, Newton; F. D. Cass, Sedan; M. A. Funchess, Horton; Carl Engel, Manhattan; M. W. Friedenburg, Atchison. As assistant pharmacists: R. D. Elmore, Nortonville; A. C. Smith, Topeka; J. R. Myers, Clay Center; M. H. Witt, Abilene; C. S. Williams, Soldier; W. T. Grove, Virgil; H. G. La Master, Hutchinson; G. S. Annabil, Inman; C. B. Brayman, Paola; F. T. Walker, Topeka; G. F. Gehrum, Atchison; W. C. Johnston, Winfield. At Concordia, Dec. 6, 1893, the next examination for registration will be held. The address of the Secretary of the Board, H. W. Mehl, is Leavenworth, Kansas.

The Virginia Pharmaceutical Association met Sept. 13th at Blue Ridge Springs. The election of officers for the ensuing year resulted as follows: President, J. F. Christian, Roanoke; Vice-Presidents—W. G. Burgess, Manchester; C. P. Kearfott, Martinsville; D. W. Mahone, Hampton; J. E. Jackson, Lynchburg; Secretary, C. B. Fleet, Lynchburg; Corresponding Secretary, W. S. Alfriend, Petersburg; Treasurer, C. H. Lumsdeu, Lynchburg; Executive Committee—T. Ashby Miller, Richmond; Andrew T. Snellings, Richmond; W. H. Washington, Manchester. Twenty new members were elected, three resigned, and a few delinquents were dropped. This, together with the annual reports of the President, Secretary, and Treasurer, indicates that the Association is in a most flourishing condition. The Association will hold its next meeting at Blue Ridge Springs, July 12, 1894.

The following passed satisfactory examinations at the late meeting of the Nebraska Board of Pharmacy: Otto Albert, Leward; H. F. Blanchard, York; Earl C. Blenkney, Stanton; A. F. Brown, Rosemont; M. Clingan, Newcastle; B. F. Freyenlein, Lincoln; Oscar Twoberg, Lincoln; L. W. Gorton, Omaha; Geo. A. Greenup, Pender; H. E. Hall, Ashland; D. H. Hart, Friend; S. L. Hestwood, Lexington; E. E. Kennard, Osceola; Adolph Krause, West Point; H. F. Ledam, Eagle; D. C. Stansberry, Stockholm; S. L. Stevens, Virginia; Henry Stanek, North Bend; F. J. Underhill, Lincoln; J. A. Vanschork, Columbus; C. J. Warner, Bennington; J. H. Lindbo, Elgin; V. B. Wheelock, Boelus; A. J. Wilcox, Grand Island; E. M. Young, Newman Grove; C. E. Barnette, Archer. On Nov. 8th the next meeting of the Board will be held at Hotel Dellone, Omaha.

At the August meeting of the Ohio Board of Pharmacy the following were awarded certificates as registered pharmacists: Otto A. Zeidler, Cleveland; Ralph Schuster, Dayton; Chas. A. Fisher, Hamilton; A. F. Egger, Toledo; Oscar I. Myers, Toledo; Nellis B. Newton, Bowling Green; Denton E. Hull, Toledo; E. J. chen. Toledo; Charles H. Steincamp, Toledo; John H. Marquardt, Toledo; Joseph Hausman, Cincinnati; John A. Siegrist, Willis Creek; Edward Wetchen, Toledo; Lucius Judson, Clayton, Mich.; R. S. Applegate, Oxford; James L. Taylor, Celina; R. E. Elrick, Harrisville, Pa.; W. F. Harper, St. Mary's, Prince Edward Island; F. A. Kautz, Jr., Cincinnati; W. M. Curtis, Charlottetown, Canada; Herman Kattmad, Cincinnati; Charles L. McIntire, St. Mary's; O. H. F. Lembke, Toledo; Henry A. Grothaus, Winchester; Daniel D. Jones, Columbus; Herbert J. Roney, Columbus; William T. Dawe, Cincinnati; Frank J. Broff, Van Wert; Mayme Liggett, Marysville; Harry B. Lewis, Defiance; Le Clair W. St. Clair, Woodsfield; Harry Applegate, Manchester; Josie Schwansky, Oak Harbor; Mamie Hebenthal, Paulding; Edgar J. Craft, Mt. Vernon; M. D. Danford, East Richland; S. C. Daniel, Loydsville; Joseph D. Crossland, St. Clairsville; Samuel R. Light, Weston. The following received certificates as registered assistant pharmacists: Eugene Hardesty, Payne; Cyrus North, Toledo; Will McDonough, Toledo; L. A. Challen, Toledo; Edward C. Frank, Toledo; G. H. Wetzen, Gibsonburg; Ross R. Mortland, Bowerstown; Victor S. Law, Toledo; Mark Rosingarden, Toledo; B. F. Kramer, Norwalk; Joseph F. Gates, Jr., Toledo; John W. Tuttle, Norwalk; William C. Harder, Sandusky; Joseph A. Demming, Cleveland; Lewis H. Ohly, Sandusky; F. S. Browne, Toledo; Frank J. Berning, Luckey; C. D. Stukey, Columbus; Edward S. Stukey, Columbus; R. N. Shaw, Savannah; William Nirss, Cleveland.

The Washington Board of Pharmacy, at its late meeting, granted certificates as registered pharmacists to J. M. Adams, of Tacoma, and Dr. Garner and Frank Van Dussen, of Seattle. Certificates as assistant pharmacists to C. A. Buys, Walla Walla; Frederick Costigan, Frank Bentley, Seattle; L. P. Dudley, N. Kent, Tacoma.

The next quarterly meeting of the New Hampshire Board of Pharmacy will be held at the Manchester House, Manchester, on Wednesday, Oct. 25th, at 10 A.M. Geo. F. Underhill, Secretary, Concord, New Hampshire.

The Massachusetts Board of Registration in Pharmacy held sessions Oct. 3d, 4th, and 5th. Thirty-eight were examined, and certificates were granted to the following named: Frederick C. Saunders and Henry E. Davis, Boston; Charles W. Megathlin, Wakefield; Ashburnham P. Crocket, Boston; Carrie E. Phillips, Cambridge; Amidee L. Cormier, Salem; H. De Forrest Smith, Boston; Edward W. Eaton, Newburyport. The election of officers for the ensuing year resulted in H. M. Whitney being elected President, and F. H. Butler Secretary. The next regular meeting will take place on the first Tuesday in January. There will no doubt, however, be held special meetings in November and December. F. H. Butler, Secretary, Lowell, Mass.

A meeting of the Michigan Board of Pharmacy for the purpose of examining candidates for registration will be held at Lansing, Tuesday and Wednesday, Nov. 7th and 8th. The examination of both registered pharmacists and assistants will commence on Tuesday at 9 o'clock A.M., at which hour all candidates will please report at Representatives' Hall. Stanley E. Parkill, Secretary, Owosso, Mich.

At the practical examination of the State Board of Pharmacy of Illinois, held in Chicago, Sept. 12th and 13th, the following passed a satisfactory examination as licentiates in pharmacy, and were registered as registered pharmacists by examination: W. W. Birchfield, C. Hedderich, T. A. T. Lemke, G. Martin, F. W. Roedel, H. G. G. Schmidt, J. Wohlgemuth, J. G. Wurster, I. R. Mower, of Chicago; C. W. Fenn, Prophetstown; and John Snodgrass, Bloomington. The following passed a satisfactory examination as assistant pharmacists, and were registered as assistant pharmacists by examination: J. W. Evans, B. Johnston, T. Kaiser, J. C. Miller, E. McQuade, H. C. McWilliams, H. E. Stiefel, H. W. Town, O. Wintermeyer, of Chicago; F. G. Reed, Quincy; T. O. Musser, Freeport; and J. A. Burtis, Evanston. Fourteen failed to pass a satisfactory examination. The results of the next examination, which will be held Oct. 17th, will be given in the November BULLETIN. Frank Fleury, Secretary, Springfield, Illinois.

At a regular meeting of the South Dakota Board of Pharmacy, held at Watertown Oct. 4th, seven applicants appeared for examination, and certificates were granted as follows: Licentiate certificates to G. S. Agersborg, Vermillion; John Peterson, Wessington Springs; G. A. Risken, Clear Lake; Chas. W. Ford, Wessington Springs. Assistant certificate to M. A. Thul, Webster. C. F. Ayer, of Howard, was elected President of the Board for the ensuing year. The next meeting of the Board will be held at Parker, Jan. 10, 1894. Application blanks may be had of the Secretary or any member of the Board. I. A. Keith, Secretary, Lake Preston, S. D.

The November BULLETIN will publish an account of the Oct. 19th meeting of the Board of Pharmacy of New Jersey. At the meeting held in Asbury Park, Sept. 7th, the following officers were elected for the ensuing year: President, Wm. R. Laird, Jersey City; Treasurer, August Drescher, Newark; Secretary, Albert S. Elwell, Bridgeton. The next regular meeting will be held in Trenton, on the third Thursday of January, 1894, at Y.M.C.A. rooms. Albert S. Elwell, Secretary, Bridgeton.

A regular meeting of the Board of Pharmacy of Connecticut was held at the Capitol, Hartford, Sept. 5th. Eighteen candidates presented themselves for examination. The successful ones were: John H. Conklin, Hartford; Richard T. Tanner, Meriden; George Malone, Bridgeport; Howard W. Holton, New Haven; Wm. L. Lloyd, Naugatuck; Wm. H. Sullivan, Collinsville; John F. Harrison, Stamford; Alfred F. Vaillancourt, Manchester, N. H. The next regular meeting will be held at the same place Dec. 5, 1893. H. N. Bishop, Secretary, New Haven, Conn.

The Mississippi State Board of Pharmaceutical Examiners met in regular session at Jackson, Oct. 3d. Seven applicants for examination presented themselves; five of these were successful and received licenses accordingly, as follows: I. W. Hosmer, Summit; S. C. Tucker, Pickens; Geo. M. Lackey, Crystal Springs; John K. Armstrong, Winona; Chas. A. Wells, Cleveland. The next meeting will be held at Jackson on the first Tuesday of April, 1894. J. C. Means, Secretary, Natchez, Miss.

RESOLUTIONS OF THE SEVENTH INTERNATIONAL PHARMACEUTICAL CONGRESS.—"The Seventh International Pharmaceutical Congress hereby reaffirms the opinion expressed by preceding international pharmaceutical congresses, that the decimal system of measures, based upon the meter, should be the only system used in the pharmacopœias; and, further, this Congress believes that fluid measures should be employed in the measurement of liquid. This Congress also believes that the scale of the Centigrade thermometer should be the only one employed in stating temperatures."

"*Resolved*, That in the judgment of this Congress the educated pharmacist is a natural and proper expert for measures of public health, not only in the prevention of adulterations, but in the inspection of water-supplies, the enforcement of good sewerage, etc. The pharmacist is, by virtue of his profession, the common chemist of the common people."

"*Resolved*, That this Congress appoint a committee of three, of which the President shall be chairman, the duty of this committee to be to take the necessary steps for the appointment of an International Pharmacopœial Commission to compile, publish, and distribute an International Pharmacopœia of Potent Remedies. The International Pharmacopœial Commission shall consist of one member from each country represented at this Congress, and from other countries as the committee of three may decide, the members of the Commission to be selected by the Pharmacopœial committees of the various countries, or to be otherwise chosen if necessary. The committee of three shall be a permanent committee, and it shall be its duty to urge and expedite the work in every proper way; and in the event of the death or resignation of any member of this committee of three, the vacancy shall be filled by the other members.

"*Resolved*, That this Congress accepts with thanks the proffer by the American Pharmaceutical Association of the sum of $1,000 to help to defray the expense of compiling, publishing, and distributing an International Pharmacopœia of Potent Remedies."

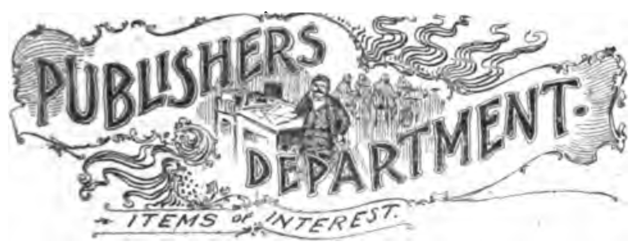
"*Resolved*, That no person should be admitted as an apprentice in pharmacy unless he shall have given evidence, by satisfactorily passing a preliminary examination, that he possesses a general education sufficient for the purpose and as advanced as the conditions of the practice of pharmacy in each country may permit, and his term of apprenticeship in pharmacy should in no case be counted so far as it may antedate such evidence of sufficient preliminary education.

"The compulsory period of apprenticeship should not be less than four years, including the time devoted by the apprentice to regular attendance upon the courses of instruction in a college or school of pharmacy.

"Recognizing the inadequacy of examinations as a means of determining the qualifications of persons seeking the important privilege of dispensing and compounding medicines, this Congress approves of the establishment of a compulsory curriculum of pharmaceutical education, and holds that no person should be regarded as a qualified pharmacist who has not pursued to completion a systematic course of instruction in the various branches of pharmaceutical science; and delegates in this Congress are requested to lend their aid toward securing the recognition of a principle of such fundamental importance to pharmacy."

THE SCHOOL OF PHARMACY of the University of Texas, which was recently created by the Legislature, opened its first session on Oct. 2d. The faculty is as follows; James Kennedy, M.D., Ph.G., Professor of Pharmacy and Lecturer on Botany; Ed. Randall, M.D., Professor of Materia Medica; S. M. Morris, M.D., B.Sc., Professor of Chemistry. The announcement of the School states that the department of materia medica and the laboratories of pharmacy and chemistry are thoroughly equipped, and every facility will be afforded for the acquirement of a practical, as well as a theoretical, pharmaceutical education. Students are advised, on arriving in Galveston, to proceed immediately to the college building (cor. Tenth and Strand), where the proctor will assist them in obtaining desirable homes.

PROF. GREENLEAF R. TUCKER, Ph.G., S.B., of Boston City Hospital, and Professor of General Pharmaceutical Chemistry and Physics and Instructor in Bacteriology at the Massachusetts College of Pharmacy, has accepted the chair of Medical Pharmacy and Bacteriology in the College of Physicians and Surgeons. Prof. Julian W. Baird, A.M., Ph.C., M.D., Professor of Analytical and Organic Chemistry at the Massachusetts College of Pharmacy, says the *New England Druggist*, will go to the same institution as Associate Professor of General Chemistry.



MALT EXTRACT.

Extract of Malt is no longer an official preparation—at least it will very soon not be, as it is one of the dismissed articles from the Seventh Decennial Revision of the United States Pharmacopœia. Why this is "thusly," when it is an article of so much therapeutic value and so largely used, it is not within our province to say. It looks to us as if the Revising Committee were either perfectly satisfied with the quality of the present commercial supplies, or that they despaired of describing or defining the product in such a way as to permit of easily-applied tests for limitation and verification of the standard of the ordinary druggist. If the former supposition be the correct one, we surmise that Parke, Davis & Co.'s Extract of Malt was one of the brands on the market that they found to respond to every test, both as to diastatic strength and palatability.

There are extracts of malt which will scarcely effect the conversion of starch, but these we need scarcely say are worthless in the treatment of carbohydrate indigestion, although they may in palatability be perfectly acceptable. It is almost out of place to speak here of the many uses to which a good extract of malt may be put, but probably the most frequent occasion is in handling cases of ovarian troubles, with the very common indigestion accompanying, that of the starchy foods in particular. Extract of Malt (P., D. & Co.) will prove itself an efficient agent wherever the natural fluids are showing themselves to be unable to accomplish starch conversion, and its present high standing of activity in this direction may be depended upon even after the official guardianship of the Pharmacopœia is dissolved.

HE WAS SWINDLED.

A man sent a dollar for a lightning roach-killer, which he saw advertised in a paper, and received by return mail two blocks of wood with directions printed on them as follows: "Take this block, which is No. 1, in the right hand; place the roach on No. 2, and press them together. Remove the roach and proceed as before."—*American Analyst.*

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ALABAMA.

Dr. Oscar Dowling, Columbia, Ala., is now sole proprietor of the store formerly owned by Dowling & Darby.

Beauchamp & Beach, Eufaula, are two very enterprising young men, and they are building up one of the best businesses in Alabama.

E. P. Galt, one of the best and most favorably known druggists in Alabama, and especially well known to pharmacy students applying for certificates to practice, has taken a very progressive step in the right direction and is now comfortably installed in a beautiful store in the new Vaughn building on Broad street, Selma. He has every modern convenience, and, after he gets over the annoyance of becoming settled, he should be a very happy man, if a good business in a first-class store and the confidence and patronage of a host of friends are capable of making one so.

White & Williams, a firm recently formed at Troy, and who propose to do a retail and jobbing business, bid fair to be one of the strongest organizations in this part of the State. They are both young men, possessed of sufficient energy and ability to conduct successfully any kind of business they might undertake, and their competitors must look sharp or W. & W. will have taken a great big bite out of the surrounding trade as their share. Everyone, competitors and all, bears the best of feeling toward the new firm, and they deserve all the good wishes which may be tendered them.

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Specify on your orders,

A CorkS A

Take no others.

Very neat plain and lacquered tin boxes are manufactured by Joseph G. Taite's Sons, Philadelphia, Pa.

"I never give money to beggars on the street," said the pedestrian. "But, my dear sir," returned the beggar, "I can't afford an office these hard times. You expect too much."—*Harper's Bazar.*

A convenient method of preparing lime-water is as follows: Dissolve six Antacidines or lime-water tablets in a half-pint of water. For further information address Theodore Metcalf Co., Boston, Mass.

"It's funny about bridal pairs. They're not like other pears at all." "Why not!" "They're softest when they're green."—*Indianapolis Journal.*

W. A Gill & Co., Columbus, O., would be pleased to have you address them in regard to their elegant seamless tin boxes—three styles, plain, lacquered, and decorated.

A neat package always most favorably advertises the druggist; especially attractive are neatly capped bottles. Tinfoil and bottle caps of elegant designs are manufactured by Lehmaier, Schwartz & Co., 33, 35, and 37 Bleecker St., New York.

JUST HOW SWEET SHE IS.

It has been shown by analysis that a young person weighing 154 pounds is composed of 96 pounds of water, three pounds of white of egg, a little less than one pound of pure glue, 34½ pounds of fat, 8¼ pounds of phosphate of lime, one pound of carbonate of lime, three ounces of sugar and starch, seven ounces of fluoride of calcium, six ounces of phosphate of magnesia, and a little ordinary table salt. Think of it, young man! That beautiful young lady whom you worship as a pillar of unadulterated sweetness doesn't contain three ounces of sugar.—*Pomona Progress.*

CANADA.

Geo. R. McCall, St. Thomas, has found it necessary to extend his premises to accommodate his growing trade, and has leased additional rooms at the rear of his store.

Jas. H. Combe, Clinton, has bought the drug business of the late Dr. Worthington, in addition to his own large store, and runs the two stores with his accustomed energy and prudence. He does an extensive trade with physicians in his vicinity.

J. E. Richards, of Aylmer, has returned from a well earned visit to Europe, greatly improved in health. May his shadow ne'er grow less.

A son of Dr. J. W. Browning, of Exeter, recently walked out of his window while asleep, and fell about thirty feet, producing concussion of the brain. At last accounts he was improving somewhat.

Mr. Wynne, of Bole, Wynne & Co., Winnipeg, passed through Toronto on the 28th ult. *en route* for the Prairie City. Mr. Wynne has been visiting the Eastern markets in the interests of his house.

Mr. Miles, of Lyman, Sons & Co., Montreal, has just returned from the lower provinces, where he has been visiting the firm's numerous customers.

Mr. Evans, of Evans & Sons, Montreal, has returned from Europe.

Mr. Lewis, the well known druggist of Montreal, had a narrow escape from a fatal accident a few days ago. While driving down Windsor street, a trolley car under full speed struck his carriage, throwing Mr. Lewis out under his horses' feet. His escape from instant death was little short of a miracle. As it was, he received a bad shaking up, but is now able to attend to business again.

Brayley, Sons & Co., of Montreal, finding their old premises inadequate for their steadily growing business, have removed to William street.

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"A Bad Start"

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By the time this issue reaches our readers the Tanglefoot season will be practically over. The retailer, as a rule, has a quantity left over. To insure its perfect condition next season, and to avoid loss to their friends, the manufacturers request every dealer to look after his stock. Full cases will take care of themselves, if kept level. Boxes and parts of boxes should be kept in a place of uniformly and moderately warm temperature and where they will not be disturbed needlessly; the cornice in the store or a high shelf in the store-room would be admirably suited for this. Tanglefoot keeps well in almost any condition, but if stored as above will keep with absolute certainty and without the loss of a single sheet to the dealer; this the manufacturers desire above all.

Some people are like poor umbrellas—they keep out the sunshine and let in the rain.—*Galveston News.*

Golden-Age is recommended by physicians of note as an effective aid to digestion and preventive of dyspepsia. If you wish a strictly pure champagne, order "Golden-Age" from Hammondsport Wine Co., Hammondsport, N. Y.

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CONNECTICUT.

The Washington correspondent of the *Norwalk Gazette*, writing of the hearings before the Ways and Means Committee of Congress on the proposed tariff bill, says: "E. C. Frisbie, one of Hartford's wide-awake and sagacious business men, got an allowance of ten minutes, Friday evening, to present his subject. He spoke as a thoroughly posted man of affairs, who knew what he was talking about, and showed himself a perfect master of his subject. His argument was clear, concise, incisive, and effectively to the point. Not a redundant word or useless figure was employed in his terse, crisp, and yet completely comprehensive address. When he concluded, he had spoken just six minutes, leaving four minutes to his credit! Yet no speaker during all that long day of weary talk had more closely held the committee's interested attention. To no one did they more distinctly show their appreciation of brevity. Mr. Frisbie's honorable conduct in using less instead of more time than was his due, as has been so generally done, was a matter of favorable comment among those who had suffered delay and inconvenience by reason of this vexatious habit, that seems to have become chronic, of overtalking before the committee. To Mr. Frisbie belongs the credit of being the first to break the record in the way of a reform of this overtalking vice."

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In the Good Samaritan Hospital, St. Louis, Dr. T. G. Comstock says: "Horsford's acid phosphate has been used for some years in a variety of derangements characterized by debility, as also in chronic gastric ailments. It is approved of, unanimously, by the medical staff of this hospital."

HOW HE COLLECTED IT.

"If you think you've got such a dead sure thing on that claim against me, why don't you sue me for it?" asked the man with the double chin.

"I could sue you and collect it easily enough, and you know it," replied the man with the bushy eyebrows, "and would have done it long ago, but for the reason that it would have brought your other creditors down on you like a thousand of brick. I don't want to break you."

"I—I'll pay it this afternoon, every cent," said the other, rubbing his jaw thoughtfully. "But that won't go with the next man that tries to work it on me, by George!"—*Chicago Tribune.*

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"THEY 'RE AT THE POST!"

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GEORGIA.

S. C. Durban is one of the most valued members of the Georgia Pharmaceutical Board; his term expired this year, but the Association unanimously voted him back. Mr. Durban is an elegant gentleman all around, and no store in Georgia is managed better than his in Augusta.

F. Jeorger, from the extreme corner of the State—Brunswick—journeyed up to Rome to be present at the G. P. A.

C. M. Crosby, the newly elected President of the G. P. A., is one of the most progressive pharmacists of the State, and the honor was worthily bestowed.

Mr. Butts and Mr. Reeves, of Brunswick, received apothecary's licenses during the examinations in Rome. Mr. Butts went with the Association to Chicago; Mr. Reeves intended going, but met with a painful accident and had to return to Brunswick.

J. W. Mangham, Griffin, was acknowledged by all to be the handsomest man in attendance upon the G. P. A., and Jack is as clever as he is handsome.

Joe Drewry, Griffin, has combined pharmacy with his law, and we of the pharmaceutical caste welcome him into our ranks.

Thomas A. Sloan, formerly associated with W. J. Platt, of Aiken, S. C., but now of McDonough, Ga., is the Mayor of that thriving little village.

H. L. Herring, of Dalton, now, instead of LaGrange. Herbert is the right man in the right place.

Emmor H. Lee, formerly traveler for Hall & Ruckel, has now opened up an office in Atlanta and is doing a drug brokerage business there.

L. R. Bratton, Atlanta, is located in his new store at last, and now has one of the prettiest drug stores in that section.

Elkins-Watkins Drug Co. have moved from their old stand to new quarters. Atlanta has no more progressive pharmacists than this firm.

Clever Jeff Turner, the successful representative for Tarrant & Co., has been confined to his bed for some time with intermittent fever, but, we are glad to state, has recovered now and will soon be on the road once more.

Paul Hogl, so long at the prescription department of H. J. Lamor & Sons, Macon, left some days ago for a long visit North. He will take in the World's Fair by the way.

H. Hirsh now presides over the prescription department of Dr. Herrman's drug store at Eastman.

Dr. Cheatham, formerly a leading doctor of Dawson, is now on the road for H. J. Lamor & Sons.

Isaac Mabbett, Quitman, has been very sick with rheumatism.

Mr. Dimmick, the able manager for P. S. Clark & Co., of Darien, lately spent his well earned vacation in Cedartown.

The Sales-Davis Drug Co. has succeeded the Hillsman-Agar Drug Co., of Albany.

W. H. Gilbert, Albany, Ga., is the Mayor of that city, and has been very stringent lately in his quarantine regulations. Mr. Gilbert makes a most excellent mayor, so his friends say.

Geo. H. Smith, Brunswick, has purchased Lloyd & Adams' store, and the firm name is The Smith Drug Co.

A. R. Harvey, Valdosta, was recently married, and has gone north on his bridal tour.

John R. Avera, Quitman, is one of the crack shots of the town, and there is no more progressive pharmacist in South Georgia than he.

A. T. Ashmore and Dr. Wimberly have the prettiest drug store in Fort Gaines.

J. W. Stanford, Cuthbert, has made quite a success financially with his drug store.

Albany Drug Co. is the firm name now, instead of H. J. Lamor & Son, Albany.

Mr. Peacock, of the firm of Bondurant, Peacock & Co., Thomasville, was married a few days since, and is now at the World's Fair with his bride.

Columbus:

Dr. J. C. Barnes recently purchased W. F. Sullivan's store.

J. A. Wills, formerly with Patterson & Thomas, has opened out a new store in this city.

Wakefield's Pharmacy is still one of our leading drug stores.

R. A. Carson, junior member of Brannan & Carson, left last week for Chicago and the Northwest generally. He will be joined by Mr. Williams, his leading man, shortly, and together they expect to take quite an extensive trip.

Polhill's Pharmacy, formerly at Rose Hill, is now on Broad street, and is most beautifully furnished out-and-out.

First Actor (in a tragic whisper): Are we quite alone?

Second Actor (glancing grimly at the small audience): Almost.—*American Analyst.*

Write for the catalogue of J. H. Day & Co., Cincinnati, Ohio, and for full particulars of Hunter's Lightning Sifters and Mixers, also for announcement of Day's Lightning Packer for packing drugs, face-powder, tooth-powder, etc., etc. Will pack from half an ounce to six pounds in any shape box, can, carton, or bag.

MOSQUERA S BEEF MEAL.

At Leipsic-Plagnitz, Mosquera's Beef Meal has been given a trial in the Fourteenth District School, which every morning furnishes needy scholars a plate of soup and a piece of bread. Under the supervision of the teachers and the physician of the school, Dr. M. Goëtz, a soup was made from Mosquera's Beef Meal in the proportion of 250 grammes to 50 litres for 130 boys, and 350 grammes to 70 litres for 164 girls. As Beef Meal is sold to hospitals and public charities at the rate of 7.15 marks per kilo, the feeding of 294 children cost per head only about six pfennings (1¼c.), inclusive of 2.50 grammes of butter and 30 grammes of grits and salt. The experiment was extremely satisfactory, and the constant use of Mosquera's Beef Meal for the feeding of the scholars of charitable schools decided upon.—*Reichs-Medicinal-Anzeiger.*

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"They re Off!"

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INDIANA.

James Haryan, Jr., has the old Swormstedt corner in Madison. The name of Haryan is well known in other lines of trade in Southern Indiana, and we feel sure that the record for first-class business ability will be kept up by James, Jr.

J. F. Blewett, of Bloomington, delighted the Hoosier eye by displaying a most magnificent specimen of tobacco plant in his window at the time of the county fair.

Cotton & Rife, two of the liveliest drug men in Crawfordsville, report a growing business even in the face of the "tough times."

Will Coleman, the faithful and efficient drug clerk with the Smith & Myers Drug Co., Crawfordsville, is taking a special course in chemistry in the Wabash College.

It has been suggested in that section of the State that one good way to learn what it requires to constitute a "hustler" is to watch the movements of Geo. L. Stevens, the live druggist of Portland.

It is gratifying to report that smallpox at Muncie is now practically under control. The new cases are getting to be few and far between.

R. C. Smith, of the Smith & Myers Drug Co., Crawfordsville, is a candidate for mayor. "Bob" would make a good one, and we wish him success.

C. M. Stephens, President of the National Capsule Co., Indianapolis, was in Detroit during the week of the N. W. D. A. meeting The Company's business is booming—they are away behind on orders.

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In-door games will soon be the order of the day. J. P. Primley, of Chicago, manufacturer of Primley's California Pepsin Chewing Gum, places in each box of gum a fine deck of playing cards—cards that will retail at from 35 to 50 cents. For quotations and further information address the manufacturer.

The Cudahy Packing Co. advise that the marketing of their various pepsin products, Rex brand beef extract, etc., as well as the manufacture of same, will hereafter be carried on by the Cudahy Pharmaceutical Co., of South Omaha, Neb. When, therefore, entering into correspondence upon these topics, communications should be addressed to the Cudahy Pharmaceutical Co., and not, as heretofore, to the Cudahy Packing Co.

CHANGED HIS NAME.

"Howdy-do, Hogg?"

"My name is Bacon, sir."

"Beg pardon; but I felt sure you were Mr. Hogg, the invalid."

"So I was; but I have been cured."—*Exchange.*

TO BORE HOLES IN GLASS.

Break off a part of the tip of a three-cornered file, and grind a triangular point upon it. Avoid heating it enough to injure the temper; then make your holes with it just as you would make holes in wood with an awl, using turpentine to moisten the bearings of the glass. The edges of the file can be sharpened with an oil stone.—*Scientific American.*

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ILLINOIS.

H. C. Kariher, of Champaign, is the proprietor of the "snuggest" looking little store in that city. E. A. Price, formerly with J. M. Miller, of Bloomington, Ill., has charge of the stock, and does the honors like a veteran.

John Garver, late of Carthage, Mo., has bought an interest in his father's store at Farmer City.

"Aaron," Chester Bolles's best man for some years past, has opened a store of his "very own" in Springfield. This runs Springfield up to about twenty-five drug stores.

"Con" Dunlap, of Jacksonville, who was Dick Dodds's night man for some time past, is open for a job. Con is a good druggist, and will no doubt easily find work.

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Paternal Parent: That young Jones comes frequently to see our Fannie. Is there anything between them, do you think?

Maternal Parent: They are at present sitting together on the parlor sofa, and I should say there is nothing between them.—*New York Press.*

The multitude of different pepsins thrown on the market during recent years has caused an increasing amount of attention to be given to the method of testing their efficiency by the profession, and the appearance of the U. S. P. for 1890 has been looked forward to as a final decision in the matter by those best qualified to decide. It is a gratifying commentary on the advanced methods adopted by our manufacturing chemists to find that the formula given in the U. S. P. of 1890 had already been in use for some time by the Cudahy Pharmaceutical Co. We have always held that a method should be adopted which would use the same amount of acid as is found in the gastric juice, and which properly manipulated should develop the highest proteolytic power. In Roberts' "Digestion and Diet" 0.2-per-cent. acid is shown to give the best results; and, following thorough and careful tests, we adopted this standard over a year ago, while early in January 1893 we adopted the exact formula now published in the U. S. P. As a matter of interest to the profession we give the formula of 1880 in comparison with that of 1890.

	U. S. P. 1880.	U. S. P. 1890.	Cudahy.
Albumen	10.0	10.0	10.0
Acid, 32 per cent	1.5	0.625	0.625
Water	100 c. c.	100 c. c.	100 c. c.
Time	5 to 6 hours.	6 hours.	6 hours.
Temperature	100 to 400	100 to 104	100 to 104

The facilities of the Cudahy Pharmaceutical Co. are such that they are able to deliver the stomachs to the laboratory within a half-hour after killing, the stomachs meanwhile having been on ice to prevent any opportunity for septic contamination. It is this immediate use of the raw material, in connection with their advanced methods of manufacture, that has rendered their pepsins and beef extracts so deservedly popular.

CUDAHY PHARMACEUTICAL CO.

In the restaurant: "The last time I ordered spring chicken here they brought me a thoroughly matured hen. How do you suppose I can get a real spring chicken?" "Order a fresh egg."—*Chicago Record.*

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LOUISIANA.

Congratulations are in order from the many friends of M. D. Kearney, of Lake Charles, who has taken unto himself a better half.

New Orleans:

Capt. Eugene May has returned from his visit to the World's Fair.

Henry Berlin, head clerk for P. L. Cusachs, contemplates an early visit to Chicago. His many friends wish him a pleasant time and a safe return.

A large and handsome building, to be used as a physicians' office building, and called the "Medical Building," is now about complete, and many of the best physicians in the city are to have their offices there. It is situated on Baronne street, a few doors above Canal—a most desirable location for a building of the kind. A. K. Finlay, one of the oldest and very best druggists in the city, is opening a very handsome drug store on the ground floor. In view of the very enviable standing of Mr. Finlay as a pharmacist and a citizen, and of the fact that so many doctors are right at his door, success is not a matter of conjecture but of certainty. The BULLETIN's best wishes for Mr. Finlay in his enterprise.

A. D. Blanchard's store, on the corner of Felicity road and Magazine street, is a new one within the last few months, and is one of the handsomest, if not the most so, in the city. Mr. Blanchard is doing a good business, and is a man who will hold all the trade he once secures.

The firm of Finlay & Brunswig recently moved into more commodious and very much handsomer quarters. They now have 120,000 feet of floor space, which is none too much for their extensive stock, and give every indication of a largely increased business this winter.

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"ON THE HOME-STRETCH;
— A DARK HORSE COMING UP
QUICKLY."

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In the year 1868, by Dr. Fehr, *Talcum Baby Powder* was discovered, and in 1873 it was introduced to the medical and pharmaceutical professions. It is antiseptic, antizymotic, and disinfectant, and of value in all affections of the skin.

The advertisement of Sennine, "the new American antiseptic," appears in this issue. It is offered as an effective product of phenol and boracic acid—"the two best germicides known"—in powder form (in 2-oz. tin boxes, with inner top perforated, convenient in applying on the wound surface), and readily soluble, 5 parts of Sennine dissolved in 100 parts of water. The advantages claimed for this new preparation are that it is comparatively inexpensive; non-poisonous and free from disgusting odor; safe internally as well as externally, thus promising much in general medicine as well as in surgery. Free sample sent upon application to the Dios Chemical Co., St. Louis, Mo.

MINNESOTA.

John Jelinek, for some time past prominent among St. Paul's drug clerks, has taken charge of Frank P. Park's pharmacy at Tracy.

C. E. Patterson, an old resident of Marshall, has entered the ranks of retail druggists, having bought the stock of Dr. W. S. Eastman at that place. Mr. Patterson retains the services of W. W. Salisbury, who has managed the store for the Doctor for some time past, and we predict for both a successful future.

R. W. Satory, for some time head clerk at James Bennett's pharmacy, St. Peter, has bought the entire stock and fixtures of Albert Berg, of the same place, and will handle the lever as proprietor in the future. Mr. Satory has many friends in and about the little city, and he will no doubt step into a paying business at once.

Canby, a pretty little town on the line of the Northwestern Railroad, in Yellow Medicine county, in the heart of one of the great wheat-growing districts, was almost entirely destroyed by fire on Sept. 8th, only one business building being left standing. Among those who met with losses are our friends McPeek & Eichinger and A. Gilberson. The property of both firms was almost entirely wiped out. Notwithstanding the drawbacks of the past few days, Messrs. McPeek & Eichinger have opened up, with what was saved and with what could be bought since, in an impromptu building, and a plain pine board bears the familiar words "Drug Store." Mr. Gilberson has preparations under way, and will soon show his friends and neighbors that he has come to stay.

On the morning of Sept. 23d, fire was discovered in the rear of Knight & Whipple's drug store at Wadena. The building was of brick, and by hard work by the fire department it was saved. A fire in a drug store, however, is bad, and in the well kept pharmacy of our friends Knight & Whipple it was very discouraging. Dr. C. E. Lum, who had an office well fitted up in the rear of the store, will suffer almost a total loss of the furniture, fixtures, library, etc.

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The perfect laxative, "Syrup of Figs," is never sold in bulk. It is put up in two sizes, to retail at fifty cents and $1.00 per bottle, and the name "Syrup of Figs" as well as the name of the California Fig Syrup Company is printed on the wrappers and labels of every bottle. Much information in regard to this preparation will be afforded you upon a perusal of advertising page 10, where the announcement of the Company appears.

The Hunyadi Arpad and other springs have been bought up by the proprietor of the Hunyadi Janos. The Hunyadi Arpad water will disappear entirely from the American market as soon as the present stock is exhausted. Of, therefore, the better known Hunyadi-water springs of Europe, there will be in future only the Janos and Lajos exported to this country.

Saratoga Carlsbad is acknowledged by physicians to be the strongest and most efficient lithia water ever offered; the five years of its use since the discovery of the spring have placed it at the head of morning aperient waters and the most serviceable and harmless of all uric-acid solvents. The Saratoga Carlsbad Spring Co., Saratoga, N. Y., solicit the correspondence of the trade.

Visitor: What a little bit of a thing your baby sister is!

Little Girl: Yes'm; it's a condensed milk baby.—*Good News.*

Caffeo-Bromide Comp. is especially indicated in the depression following the use of alcoholic stimulants. Chas. S. Baker & Company, Pharmacists and Chemists, Chicago, Ill.

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"THE DARK HORSE LEADS."

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MISSOURI.

St. Louis:

Carey Bros., the hustling druggists of St. Louis and Glasgow avenues, have recently sold their Cass and Bacon Street store to one of their clerks, who we hope will succeed in his new enterprise even beyond his expectations.

Carey Bros. have opened a new store at Cherokee and California avenues. They are deservedly popular wherever they go. Their future success is assured.

J. Weiner, Twenty-eighth and Washington, has moved his stock across the street—a grand improvement. With a cheerful store-room and a well selected stock, we predict a great increase in his business.

W. W. Thornton, of 2749 Washington street, has just returned from a trip to Chicago and the World's Fair, where he spent a few days most pleasantly and viewed the landscape from the top of the Ferris wheel.

Jas. M. Boston, 2601 Washington avenue, has just returned from his second trip to the World's Fair. What "Jim" doesn't see is not worth seeing. He tried to buy the Ferris wheel, but found that the price was too steep.

Louis Schurck spent several days at the World's Fair, very pleasantly and profitably, as he needed a rest from his close attention to business.

Julius E. Koch has taken in the World's Fair.

Gust Koch, of 1948 St. Louis avenue, and H. F. Spilker, of 1801 Chouteau avenue, had a splendid trip to the World's Fair and then to Detroit, taking in all the pharmaceutical laboratories on the way.

John H. Allen has just returned from his vacation and a trip to Chicago and the World's Fair.

Leland Miller has returned from the World's Fair, where he spent a week most pleasantly.

Elixir Six Iodides is indicated in a wide range of diseases, particularly so in skin diseases, both scaly and papular, specific diseases of systemic infection, and in fact in all complaints where an alterative and tonic is indicated. This Elixir is kept in stock by wholesale druggists generally, to whom all orders for less than gross lots should be addressed. For further information address the Walker-Green Pharmaceutical Co., Kansas City, Mo.

One of the best evidences of the utility of Arnold Sterilizers is illustrated by the number of prominent institutions that are exhibiting and using them at the World's Fair. Noticing the interest these institutions have taken in their display, one of the firm has photographed a few of these exhibits, making a neat little "World's Fair Souvenir." A copy of this "Souvenir" may be had upon application to Wilmot Castle & Co., Rochester, N. Y. They will also be pleased to correspond with you in detail with reference to their manfactures.

JUST IN TIME.

Cobble: As I was coming out of Miss Castleton's last night, I met her father face to face.
Stone: Did you bow?
Cobble: No. I ducked.—*Life.*

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NEW YORK.

One of the most attractive and best appointed drug stores in New York City is the City Hall Pharmacy, located at 263 and 264 Broadway, of which George Kneuper is proprietor. The fittings of the store throughout are of oak. The fixtures are in separate cabinets, and, being movable, can be placed in any desired position. French plate mirrors run the entire length of the store; the dimensions of which are 26×85. Owing to rapidly increasing business, a new soda-fountain has been placed in the store, which is one of the largest, if not the largest, in the city. It is of Tennessee marble with onyx trimmings, fronted with a beautifully designed counter of same length and material. When filled it contains 120 gallons of syrup; it is 39 feet long, and has three refrigerators. Above the fountain are placed three large plate mirrors, 13½ feet long, second only in size to the largest made. All waste from ice-boxes is brought into contact with the air before reaching the sewer, thereby raising the temperature sufficiently to prevent the formation of the slimy deposit which otherwise forms and invariably stops up waste pipes. In the rear of the Broadway store is a refrigerator where all the syrups are placed before being transferred to the fountain.

Mr. Kneuper's private office is situated between the Broadway store and the Warren-street annex, and is a real gem in its way.

The annex on Warren street is 48×15; it is used as a laboratory, and contains the most approved apparatus for manufacturing the numerous preparations which this house puts up—among which may be mentioned especially fine perfumes and toilet extracts. The "concentrated essence of violet" is a most exquisite odor.

Mr. Kneuper has taken care to surround himself with an efficient corps of clerks, and to their untiring efforts is due no small part of the success of this establishment. J. A. Kilpatrick is superintendent, and shows himself eminently qualified for the position. He is gentlemanly, and conversant with all the details of pharmacy. W. H. Kennedy is outside salesman, and his long experience and affability enables him to please customers howsoever exacting they may be. The prescription department is in charge of F. M. D. Raub, and a more conscientious or accurate dispenser has never graduated from the New York College of Pharmacy. Mr. Kneuper has fourteen on the pay-roll, and if business keeps on growing at the rate it has during the past two years it is safe to say that in another year or two he will be obliged to employ twice this number. He contemplates something entirely new in the line of window decorations, which will be a revelation to the drug trade.

⁂

"The Finish; — Dark Horse Wins Favorites Fined."

⁂

In the new U. S. Pharmacopœia all quantities are exclusively expressed in Metric System weights and measures. The druggist will, therefore, soon find it necessary to place an order for graduates manufactured in accordance with that system. Duplex graduates are manufactured by Whitall, Tatum & Co., 410–416 Race street, Philadelphia, Pa. The duplex graduates have the U. S. standard measures on one side and the metric on the other, and will thus greatly assist those unfamiliar with the latter in acquiring facility in their use.

Why sports the clerk his overcoat
When the weather's bright and fair?
He has two full-moons in his pantaloons,
And nary a patch is there.
—*The Comet.*

The sign "Ice-Cold Soda-Water" must soon be changed to "Hot Soda." Cocoa is one of the most palatable of hot drinks. Phillips's fountain chocolate makes a perfect syrup, delicate in flavor. SAMPLES FREE ON REQUEST. Address The Charles H. Phillips Chemical Co., New York, mentioning the BULLETIN OF PHARMACY.

The attention of druggists is called to the corrugated paper packing manufactured by Robert Gair, of New York. Address P. O. Box 2789. This packing is manufactured in rolls, tubes, nests, cartons, wrappers, and sheets of any size. Especially is it recommended for mailing purposes, securing perfect safety in transit and adding but little to the postage.

OHIO.

Cleveland:

A. H. Van Gorder, of Benton, Myers & Co.'s, is spending a week at Kelley's Island, fishing.

W. F. Hazelton has opened a new drug store, corner Scranton and Auburn avenues.

G. E. Schmehl & Co. have a new drug store, corner Wilson and Hough avenues. .

C. W. Benfields has his new store, corner Payne and Wilson avenues, in running order, and has one of the finest arranged pharmacies in the city.

D. C. Lindsey and wife are visiting in Chicago and seeing the Fair.

Ed Schneider, traveling salesman for Benton, Myers & Co., devoted, with his wife, two weeks to Chicago and the World's Fair.

James Bruce and wife are taking a western trip; expect to visit Chicago and St. Louis before they return.

Henry C. Gaylord, one of the oldest pharmacists of this city, died at Akron, Ohio, Sept, 30th, under peculiar circumstances. He had been in poor health for some time. Leaving his home as usual, on Thursday, Sept. 29th, he went to Akron, O., and put up at the Empire House. Going direct to his room in the evening, nothing further was seen of him until Friday morning at 9.30, when the clerk found his door unlocked and Mr. Gaylord lying on the bed in a stupor; he had removed his shoes but was otherwise entirely dressed. As the clerk could not arouse him, Dr. J. W. Rabe was at once called, but it was too late—a partly emptied bottle of morphine on the stand in the room indicated he had taken the drug. His wife was at once advised by wire, and was able to be with him at the moment of his death. Mr. Gaylord's father, Erastus Gaylord, kept a drug store in Cleveland and was one of the pioneer business man of the city; in his store his son Henry got his early experience in the drug business. Deceased was a great student, especially in botany. He was a native of Norwich, Conn., and at his next birthday would have been 68 years old. Besides a large circle of friends, he leaves a wife, two sons—one, Dr. .C Gaylord, of San Francisco, who is home on a vacation—and a daughter.

⁂

Druggists are respectfully requested to refer to the advertisement, upon the fourth page of cover, of the National Folding Box and Paper Co. Quotations and detailed information concerning their articles of manufacture promptly furnished upon request.

"Who makes the kittens, Jakie?"

"Why, God makes them, Ethel. He doesn't make them as He does babies, one by one, but He just says, 'Let there be kittens,' and there are kittens."—*Meyer Bros.' Druggist.*

There is nothing more essential to druggists and their customers alike than that they be supplied with wines and brandies of known purity and excellence. The Steuben Vineyard Association, Bath, N. Y,, has been engaged in the production of wines and brandies for the past twenty-eight years, and therefore can assure the trade pure and fully matured goods.

Every man who is not bearing any burden is a burden to himself.—*Galveston News.*

Before placing your order for perfumes for the holiday trade, address H. Rebscher, 244 to 246 State St., Rochester, N. Y. Samples will be furnished FREE upon application.

Charles E. Adams, of Lowell, Mass., and Charles T. Pierce, 170 Fulton street, New York, have been selected as the Committee on Analysis of Linseed Oil. Samples of suspected or adulterated linseed oil should be forwarded to either of the gentlemen in question. A complete report will be made at the annual meeting, which will convene in November at Pittsburgh, Pa.

⁂

SOUTH DAKOTA.

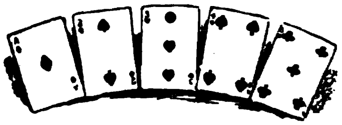
Wide-awake George Briggs, Castlewood's pioneer druggist, but later of Watertown, is again at his old home and engaged in his favorite work, the retail drug business. No temptation, he says, be it ever so brilliantly pictured, can persuade him to leave Castlewood again. He has connected himself with F. A. Cheever; the firm name will be F. A. Cheever & Co.

G. P. Jones, of Jones, Riley & Co., Raymond, Clark county, has purchased the interests of Mr. Riley, and with the assistance of N. O. Aylsworth, a pioneer at the business, will favor the village and adjoining country with as well stocked a drug store as Clark county affords.

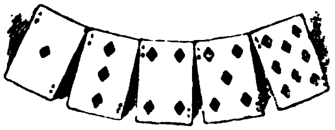
⁂

MY POKER GIRL.

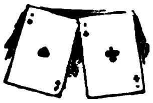
Her eyes are velvet, soft and fine,
That none can antedate;
Her hair's fine strands seem
all divine,
Her form is, oh! so



Her teeth, like driven snow, are white;
And when she wills to
blush
There is no tint that can
equal quite
Her rounded cheek's fine



Could I but hold a hand like that
Just once, I would not care
If afterwards I stood quite pat
Forever, on a



—*Tom Masson, in Life.*

⁂

"You cannot participate in the benefits of our advertising unless you assume the trifling burden of carrying the goods in stock." Address The Skookum Root Hair Co., 57 Fifth avenue, New York.

If you desire the most attractive labels, invoice blanks, announcements, etc., impress this on your memory: Gillam's Sons Company, Philadelphia, Pa., are headquarters for all kinds of printing and embossing.

Calculi dissolved by the Buffalo Lithia Water. The water is supplied in cases of one dozen half-gallon bottles. For quotations address Thos. F. Goode, proprietor, Buffalo Lithia Springs, Va.

The essay of the small boy is generally full of curious facts; but we have never come across one which gives us such a reversion of English history as the following submitted by a Cardiff youth at his school examination:

King Henry 8 was the greatest widower that ever lived. He was born at Anne Domino in the year 1066. He had 510 wives, besides children. The 1st was beheaded and afterwards executed. The 2nd was revoked. She never smiled again. But she said the word "Calais" would be found on her heart after her death. The greatest man in this reign was Lord Sir Garret Wolsey. He was sir named the Boy Bachelor. He was born at the age of fifteen unmarried. He often said he had served his wife as diligently as he had served his king, she would not have deprived him of his grey hairs. * * * Henry 8 was succeeded on the throne by his great grandmother, the beautiful and accomplished Mary Queen of Scots, sometimes known as the Lady of the Lake, or the Lay of the Last Minstrel.—*Illustrated American.*

The attention of our readers is called to the attractive and distinctive Antikamnia advertisement in this number. The firm would appreciate your addressing them for samples, literature, and quotations.

⁂

TEXAS.

C. T. Scott, of Port Lavaca, has sold out.

Johnson, Gould & Co., of Giddings, have sold out.

W. D. Hume has sold out to W. A. Tryon, of Houston.

Hertz & Kiesling, of Houston, are succeeded by J. E. Hertz.

C. T. Welke, of Dallas, has sold out to La Beaume & Rogers.

Fountain & Bringhurst are successors to E. J. Fountain, Bryan.

R. H. Heffley & Co., of Belton, have sold out to Austin & Hunter.

E. T. Renfro's stock of drugs at Brownwood was badly damaged by fire. The same conflagration entirely consumed the Pecan Valley Drug Co.'s store.

R. E. Luhn, of Brenham, has just returned from Chicago, Ill., and reports having had a good time.

It is sincerely hoped that W. B. Dunlap, of Beaumont, who some days ago was upon the sick list, has been completely restored to his accustomed health and strength.

C. D. Kingston, of Denison, wears a broad smile on his face, as he has just taken stock and found the year's business far in excess of his most sanguine expectations. It is to be remembered that two failures occurred at this stand, and the present owner is to be congratulated.

The southern portion of the State needs rain very badly, as everything is as dry as tinder and the farmer cannot till the soil.

Judging from appearances, one would say Laredo was very healthy, as every proprietor of a drug store is either in Chicago or out of the city on a hunt.

The feeling exists among the merchants that if the farmer does not soon sell his cotton and pay his bills we will have more failures than ever known in the history of the State ere Christmas.

H. W. Stark, of Gainesville, has been confined to his bed with a severe attack of typhoid fever. We hope his recovery may be speedy and complete.

The many friends of Tom Cheldress, of Cleburn, will be sorry to hear of his being confined to his home by sickness.

The XIX Medicine Co., Cleburn, are getting ready for the fall and winter trade. Their preparations are well known in this State, and the sale for the same is on the increase.

If you want to see a business in the true sense of the word, call at T. B. Bond's, Hillsboro, where you will find all hands busy from morn till night.

E. H. Railey, Hillsboro, has moved the "Eagle Drug Store" to a side street, where he is ready to welcome his friends.

Business rather better in North Texas than South.

Dallas:

It is rumored that the J. W. Crowdus Drug Co. will build an addition to their house to accommodate their increasing business.

Alb de Lorenzi, of the El Mereto Pharmacy, is the proud possessor of an heir. Congratulations are extended.

J. C. Rippetoe made a flying trip to St. Louis, Mo., on business.

Business at Dallas is reported very quiet, but collections are better so far this year than last.

Fort Worth:

H. W. Williams & Co. report business very quiet in their territory. This is ascribed to the tenacity with which the farmers hold their cotton.

The Dashwood Pharmacy has been entirely remodeled by its proprietor, and now wears a dress of white and gold, and is without doubt the best appointed store in the city.

Messrs. Grammer & Connery are enjoying the sights of Chicago and the World's Fair.

Sherman:

J. A. Skillern has just opened the finest drug store in Northern Texas. He has taken great pains in the selection of his stock, which is complete. He is ably assisted by Geo. Tayman, who is known in the city as a hustler for business.

Bitting & Andrews have sold out their store to De Vogell & Low. The new proprietors take possession Nov. 1st.

Waco:

Messrs. Behren, Morrison, and Heffley have just returned from the World's Fair, and are now kept busy describing what they saw on the grounds and Midway Plaisance.

The Behren Drug Co. reports business very light.

Will Shumacher, of the Behren Drug Co., has gone to Germany to settle the estate of a deceased relative.

Morrison & Heffley succeed W. B. Morrison & Co.

San Antonio:

President Geo. Kalteyer, of the San Antonio Drug Co., has just returned from an extended trip through the North, and is now to be found at his desk.

O. Silverthorn, of the firm of Tepo & Silverthorn, is now in Chicago to see the sights. What escapes his eye will not be worth journeying for.

N. C. Young, as soon as he succeeds in settling his insurance losses, will open up again at the old stand.

Geo. R. Gersdorf, for many years with the Meyer Bros.' Drug Co. as traveler, has accepted an inside position with the San Antonio Drug Co. His many friends will miss him on the H. & T. C.

⁂

Many druggists have quite an extensive mail-order trade. Mailing cases of the lightest weight, manufactured in accordance with the postal requirements and approved by the postal authorities, are supplied by the Boston Mailing Case Co., 40 Water St., Boston, Mass. For circular and price-list address the Company.

⁂

CURED WITH ONE BOTTLE.

—*Judge.*

⁂

How is it such numbers of young men starting out to make a name for themselves in life hit on Dennis?—*Philadelphia Times.*

Billings, Clapp & Co., manufacturing chemists, Boston, Mass., would be pleased to receive your request for their catalogue and literature affording information *in extenso* upon their preparations.

Novelties in corrugated and cork partitions for bottle-packing purposes are manufactured by the Thompson & Norris Co., 10 to 34 Prince St., Brooklyn, N. Y. See illustrations, advertising page 4 of this issue.

THE SUMMER COMEDY.

"Have you the back-drop of sea-waves securely arranged?" asked Stage-manager Cupid.

"Yes," replied Mammon, who was acting as property-man.

"Is the Summer-girl seated on the piazza?"

"She is."

"Young man ready to take his cue?"

"All ready."

"Good! Now turn on the moon and ring up the curtain."—*Puck.*

WISCONSIN.

O'Connor & Leland, Monroe, have sold their drug business to C. A. Wakeman & Co. Mr. Wakeman, the manager, is an energetic young business man. He will make lots of friends, and is to be congratulated upon stepping into a business so well and thoroughly established. The reputation of the house for fair dealing and honest goods will be maintained.

A. M. Leland, formerly of the firm of O'Connor & Leland, Monroe, Wis., has bought out the drug business of Wardrobe Bros., Waukesha. He will fix up the store in fine shape, and proposes to make it second to none either in appearance or management.

F. F. Prentice, Janesville, of the firm of Prentice & Evenson, who some four or five months ago suffered a stroke of paralysis, has sufficiently recovered to be out again, and is at present recuperating his health in California. His many friends will rejoice at the prospect of seeing his genial and smiling face again.

Lou Bauman, junior member of the firm of J. Bauman & Co., Oshkosh, has taken a side partner (to share his profits). The happy couple are making an extended tour through the Eastern cities, and will of course visit the great World's Fair before returning to settle down to "pill pounding" again. The BULLETIN wishes them a long, happy, and successful life.

E. A. Lange, West De Pere, owing to the increase in his business, has found it necessary to move into new quarters, where he can have room to spread himself and show up his stock in better shape.

W. M. Workman will open up a new drug store in West De Pere about Nov. 1st. Mr. Workman was formerly in the drug business at this same place, but for a number of years has been engaged in other business elsewhere. His many friends in this locality will welcome him back to his first love.

⁂

HONOR EASILY GAINED.

In times past there was in a certain law school an aged and eccentric professor. "General information" was the old gentleman's hobby; he held it for incontrovertible that if a young lawyer possessed a large fund of miscellaneous knowledge, combined with an equal amount of common sense, he would be successful in life. So every year the professor put on his examination papers a question very far removed from the subject of criminal law. One year it was, "How many kinds of trees are there in the college yard?" The next, "What is the make-up of the English Cabinet?"

Finally, the professor thought he had invented the best question of his life. It was, "Name twelve animals that inhabit the polar regions." The professor chuckled as he wrote this down. He was sure he could "pluck" half the students on that question.

And it was beyond a doubt that that opprobrious young loafer, Thompson, would fail.

But when the professor read the examination papers, Thompson, who had not answered another question, was the only man who had solved the polar problem. This was Thompson's answer: "Six seals and six polar bears." Thompson got his degree, with distinction.—*St. Louis Post-Dispatch.*

SAMUEL M. STRONG,
of
Strong, Cobb & Company,
Cleveland, Ohio,
Treasurer of the National Wholesale Druggists' Ass'n.

BULLETIN OF PHARMACY

A MONTHLY EXPONENT OF
PHARMACEUTICAL PROGRESS AND NEWS.

VOL. VII. No. 11. DETROIT, MICH., NOVEMBER, 1893. $1.00 a year. Single copies, 10 cents.

THE
BULLETIN OF PHARMACY
A MONTHLY EXPONENT OF PHARMACEUTICAL, CHEMICAL,
AND BOTANICAL PROGRESS AND NEWS.

SUBSCRIPTION, - - $1.00 PER YEAR.

All papers for publication and all communications with reference to the text should be addressed:

EDITOR BULLETIN OF PHARMACY,
Box 470, DETROIT, MICH.

All communications of a business character should be addressed:

GEO. S. DAVIS, Publisher,
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INDEX OF CONTENTS.

Editorial. PAGE

Samuel M. Strong 481
United States Pharmacopœia, 1890 482
Price-Scale for Prescriptions 483
Melting-Point of Cocaine Salts 483
Correction 483
Fire 483
A Word to Our Readers 483
The Shoe on the Other Foot 484
The Progress of Science 485
Culprits in the Role of Accusers—A Retrospect 486
An Officious Meddler 487

Original Articles.

PRACTICAL PHARMACY.

What are the Benefits, and What if any the Losses, to the Community and to Pharmacists by Reason of the Existence of Pharmacy Laws? By S A. D. Sheppard 488
Analyses of Some Ethical Patent Medicines. By H. W. Snow, Ph.C. 489
Would it be a Gain or Loss to Pharmacists to Compel Apprentices to Pass a Board of Pharmacy Examination on their General Education Before Permitting them to Begin Work in the Drug Store? By Rosa Upson, M.D 491

CHEMISTRY.

More Chemistry Needed—A Plea for the Extension of this Branch of a Pharmacist's Training. By Alfred R. L. Dohme, A.B., Ph.D. 492
The Relation of Specific Gravity to Atomic Weight. By A. N. Doerschuk 495

BOTANY AND MATERIA MEDICA.

The Organic Materia Medica of the U. S. P. 1890. By G. Suttie, M.D., Ph.C. 496
A New Galactagogue. By O. A. Farwell 499
Nut Cracking 499

Correspondence.

London Letter 502
Berlin Letter 503
Chicago Letter 504
An Open Letter 505
Book Reviews 506
Facetiæ 508
Clippings and Translations 511
Pharmaceutical Progress 515
Notes and News 516
Publisher's Department 518

Editorial

SAMUEL M. STRONG.

Mr. Samuel Merwin Strong, of Cleveland, O., Treasurer of the National Wholesale Druggists' Association since its organization in 1876, and senior member of the firm of Strong, Cobb & Co., was born in Lorain in 1832. His education was obtained in the Berea schools and at Oberlin College.

In 1850 he started his business career by securing employment in a drug store at Elyria at a salary of $100.00 per annum. At the expiration of the first year's engagement he moved to Cleveland, Ohio, and was employed in a wholesale and retail drug store, where he remained until 1858. That year, in company with Mr. A. C. Armstrong, he purchased the wholesale drug business of E. F. Punderson, which was established in 1833, and the at one time widely known drug house of Strong & Armstrong was organized. After fifteen years of successful business Strong & Armstrong were succeeded by Strong, Cobb & Co., who since that time have conducted a large and constantly increasing business, now embracing six separate departments, each completely stocked, making this one of the leading wholesale drug houses of the country.

Notwithstanding the many duties that devolve upon the general manager of a wholesale drug house, Mr. Strong has for several years found it possible to devote not a little of his time to services on boards of charities: having been an active Director of the House of Correction Workhouse, the Cleveland Bethel, Huron Street Hospital, and other institutions of like character.

Furthermore, to all this must be added duties incident to positions of a business nature; for some time he was Vice-President of the Electric Light Company, and is now a Director of the Cleveland Chamber of Commerce, Director of the Union National Bank, and holds positions of like character in other companies,

UNITED STATES PHARMACOPŒIA, 1890.

The new United States Pharmacopœia which has just been published by the Committee of Revision is, in its general character and arrangements, similar to the one of 1880, but contains 122 additional pages, largely used for the more extensive descriptions of reagents, tests, solutions, official articles, and valuable tables for reference.

In taking up a chemical review of the work, one can only utter words of praise to the Committee for their excellent work. We find, among twenty-seven chemicals added, many important medicinal agents such as Acetanilid, Cocaine Hydrochlorate, Hydrastinine Hydrochlorate, Hyoscine Hydrobromate, Hyoscyamine Hydrobromate, Paraldehyd, Physostigmine Sulphate, Salol, and others.

The Committee has wisely extended the directions for testing many of the chemicals, and placed an additional standard requirement for three galenical preparations with processes of assay, thus placing before the pharmacist sufficient means to enable him to give as full a personal guarantee of their nature as if he had manufactured them himself. The number of reagents has been increased to 116, and the volumetric solutions number seventeen, an increase of eleven over the 1880. These additional instructions are certainly intended to inspire frequent use of them, and it is to be hoped the pharmacists will not disappoint the authors.

The analytical work, as to the volumetric solutions, is presented in a concise form in a table on pages 504 to 508. Descriptions are also given for gasometric estimations, extraction of alkaloids by unmiscible solvents, and determination of the essential oils and other substances by means of polarized light.

A number of very useful tables are given, containing the atomic weights of elementary substances, the formulæ and molecular weights of compounds that are official, multiples of atomic and molecular weights, thermometric equivalents, saturation equivalents of different acids, etc., all for the convenience of the analyst.

Following are a few examples of the requirements for some articles:

"*Acetanilid.*—A cold saturated aqueous solution of acetanilid added to ferric chloride T. S., should not affect the color of the latter (absence of anilin salts and various allied substances).

"*Atropine.*—With gold chloride T. S. it gives a precipitate which, when crystallized from boiling water acidulated with hydrochloric acid, is deposited, on cooling, in minute crystals, forming a yellow, lustreless powder on drying (difference from, and absence of more than a small proportion of, hyoscyamine).

"*Bismuth Subnitrate and Subcarbonate.*—If one gramme of the salt be ignited in a porcelain crucible, the residue, when cold, dissolved in 5 c. c. of stannous chloride T. S., and a small piece of pure tin-foil added, no dark coloration or precipitate should be produced within fifteen minutes (limit of arsenic).

"*Acetic Ether.*—When 25 c. c. of acetic ether are shaken, in a graduated tube, with 25 c. c. of water, just previously saturated with the ether, upon separation the ethereal layer should not measure less than 24.5 c. c. (absence of an undue proportion of alcohol or water).

"*Cocaine Hydrochlorate.*—Should be anhydrous and neutral to litmus. If 1 drop of a mixture of one volume of decinormal potassium permanganate and two volumes of water be added to 5 c. c. of 2-per-cent. solution of cocaine hydrochlorate mixed with 3 drops of diluted sulphuric acid and contained in a small, clean, glass-stoppered vial, the pink tint produced by the permanganate should not entirely disappear within half an hour (absence of cinnamyl-cocaine and some other bases derived from coca).

"*Creasote.*—Specific gravity, not below 1.07. If 1 c. c. of creasote be shaken with 2 c. c. of benzin and 2 c. c. of freshly prepared barium hydrate, upon separating the benzin should not be blue or muddy, and the aqueous layer should not have a red tint (absence of coerulignol and some other high-boiling constituents of wood-tar).

"*Eucalyptol.*—It is optically inactive (distinction from the oil of eucalyptus and many other volatile oils)."

Iron and Quinine Citrates.—Processes are given for the estimation of quinine in the iron, requiring 11.5 per cent. of the former and an equivalent of 14.5 per cent. of the latter.

Quinine and Strychnine Citrate.—Methods are also given for the estimation of strychnine and iron, requiring between 0.9 and 1 per cent. of the former, and about 16 per cent. of the latter.

Hyoscyamine Hydrobromate and Sulphate.—Tests are given to show the difference from atropine.

"*Oil of Cloves.*—Specific gravity, 1.06 to 1.067. If 1 c.c. of the oil be mixed with 2 c.c. of a mixture of two volumes of alcohol and one volume of water, it should form a clear and perfect solution (absence of petroleum, most fatty oils, oil of turpentine, and similar oils).

"*Oil of Eucalyptus.*—If 1 c.c. of the oil be mixed with 2 c.c. of glacial acetic acid, and one or two c.c. of a saturated aqueous solution of sodium nitrite be gradually added, the mixture, when gently stirred, should not form a crystalline mass (distinction from oils of eucalyptus containing a considerable proportion of ***phellandrene***).

"*Cod-liver Oil.*—When the oil is allowed to stand for some time at 0° C., very little or no solid fat should separate (absence of other fish oils, or many vegetable oils)."

Olive Oil.—Tests are given to show the absence of more than about 5 per cent. of cottonseed oil, and of many other foreign oils, also absence of sesamun oil.

"*Salol.*—On shaking 1 gramme of salol with 50 c.c, of water, the filtrate should not be affected by ferric chloride previously diluted with twenty volumes of water (absence of uncombined carbolic or salicylic acid); nor by barium chloride (absence of sulphate or phosphate); nor by silver nitrate (absence of chloride)."

Many others might be included in this list, but these are sufficient to show that the Pharmacopœia tests are intended to discriminate between adulterated and genuine drugs.

Among the galenical preparations we find the following standard requirements:

Extract of Nux Vomica, 15 per cent. of total alkaloids.

Fluid Extract of Nux Vomica, 1.5 grammes total alkaloids in 100 c.c.

Tincture of Nux Vomica, 0.3 gramme total alkaloids in 100 c.c.

Extract of Opium, 18 per cent. of morphine.

Tincture of Opium, from 1.3 to 1.5 grammes morphine in 100 c.c.

One grain of Pepsin is required to dissolve 3,000 grains of egg albumen in six hours; and the saccharated, 300 times its weight or six times as much as required in the 1880 Pharmacopœia.

It is gratifying to see that the Pharmacopœia has adopted standard requirements for this class of preparations, and it is to be hoped the same treatment will be extended to other well known preparations before another decade, in a semi-decennial edition.

T.

PRICE-SCALE FOR PRESCRIPTIONS.

On page 514 of the BULLETIN we publish an article by Mr. George Cutts, of New York, relative to a uniform price-scale for prescriptions.

Uniform prices for prescriptions would certainly be desirable in many ways, but experience has proven that uniformity in this direction can only be secured in a limited degree.

If perfectly uniform prices are charged for different sized bottles, customers are apt to observe such uniformity and consider that the prices are fixed without regard for the actual value of the ingredients.

Plain figures on the label could easily be changed by cunning customers, and would frequently serve as a criterion by which cut-rate druggists could undersell their competitors. Such a plan could only be employed successfully in a small town where druggists are friendly and competition is natural. Even in such cases a private cost-mark which could be agreed upon by all concerned would serve much better than plain figures.

It is our opinion that a druggist should charge a fair price for the ingredients and a fair allowance for his time and skill. Time should be calculated by the hour at some definite value, and sufficient allowance made for preparatory and supplementary work.

As this is a subject in which all dispensing pharmacists are interested, we take occasion to assure our readers that the columns of the BULLETIN are open to them, and invite correspondence from any who feel that they can contribute even one idea which may prove of general service.

MELTING-POINT OF COCAINE SALTS.

In our last issue appeared an article on the "Melting-Point of Cocaine Salts," by John M. Francis, and in concluding the article in question the author stated: "In the next number of the BULLETIN I shall offer as proof of my statements some results obtained by careful experimentation on cocaine salts." We very much regret that these "Results" reached us too late for publication in this number. They will appear in the December issue.

CORRECTION.

In the August number of the BULLETIN OF PHARMACY appears an inaccuracy in the article on Prof. Tschirch. The *Pharm. Gesellschaft* was not established by Tschirch, but by our colleagues Goeldner, Gützkow, Holfert, Ritsert, and Thoms.

Prof. Tschirch had tried for six years to establish the journal, but was unsuccessful.

FIRE.

A recent destructive conflagration, which probably originated from spontaneous combustion in a Detroit building containing a large stock of paints and oils, should serve to remind both wholesale and retail druggists that "eternal vigilance is the price of safety." In the July 1893 number of the BULLETIN, we published an exhaustive editorial relative to fire precautions which is worthy of careful consideration.

A WORD TO OUR READERS.

We have been loath to reserve the space which will be found occupied in the present BULLETIN by our consideration of certain controversial questions. If we have felt constrained to do so, the chief motive has been our feeling that the numerous false and specious statements now circulating so freely require refutation in simple justice to a prominent house which has too long been the target of every form of falsehood, abuse and detraction that an envious malice could contrive.

THE SHOE ON THE OTHER FOOT.

When in 1877 Messrs. Parke, Davis & Co., of Detroit, introduced cascara sagrada to the medical profession of America, it was fondly hoped that with the advent of a reliable remedy for habitual constipation the era of good-nature would dawn upon costive humanity. Little did they then dream of the howling in Rome that their action was straightway to provoke—the echoes of which have not yet died away on the all-subduing air.

Do we not all remember the charges of false name, misrepresentation, unwarranted admixtures in the fluid extract, suppression of the botanical designation, etc., etc., which formed the chorus of their united competition, and in which no one clamored louder than the proprietor of a pink sheet on which we have recently wasted counsel and space? Whew, didn't they make it interesting? From Dan to Beersheba, what a racket! One asserted that there was no such drug; that a false name had been coined and all botanical data suppressed for the purpose of monopolizing the worthless product. Another went about insinuating or asserting that the fluid extract had been fortified with aloes or with nux vomica and what not.

When the futility of these tactics was fully demonstrated by the immediate popularity of cascara sagrada as a remedy for constipation, the tribe of clamorers made haste to purchase the rubbish offered for sale on the open market, and to cut the price to pieces. Quite in vain. The introducers maintained their trade intact, and every comparison of the competitive extracts only redounded to the confusion of their rivals.

No house in the country made itself more offensive in all this controversy than that of Frederick Stearns & Co. They too declared, through their travelers, that Cascara Sagrada was a false name coined intentionally in order to monopolize an inert, worthless drug. After Cascara Cordial was originated and introduced, these non-secret pirates at once pounced upon the preparation and offered their imitations at reduced rates wherever they could hope for a sale. Presently they went a step further, increasing somewhat the strength of their imitation of Cascara Cordial, and marketed it under the name of Cascara Aromatic, their travelers declaring with one voice that they—Stearns & Co.—were the introducers of *Rhamnus Purshiana*. The literature of Parke, Davis & Co. was stolen bodily by the same house, reproduced verbatim, and the name of the former religiously erased wherever it had in the past received deserved mention.

No attention was paid to this rapacity until it was found that the false claim of originality in product and in the introduction of the drug itself was working mischief in the minds of medical men who had given the real introducers the credit which they deserved in the past. For no other purpose than to teach these brigands a lesson, Parke, Davis & Co. added a Fluid Cascara Aromatic to their list, and this preparation has so far superseded the piratical product of the imitators that the latter are white with rage, fume at the mouth, and emit clouds of abuse and falsehood in the speech of their travelers and in their printed matter.

Of course *they* cannot see that they did anything unjustifiable when they misrepresented the motives of the introducers at the outset, when they imitated the Cordial, when they stole the literature, and when they made a false, shameless claim to originality in the introduction of the drug itself. All that *they* had a right to do, of course—being avowed non-secret pirates, they are exempt from the laws of decency and common truthfulness which restrain other men—but the special privileges of their infamous traffic must not be invaded by houses whose professions are higher.

But upright, honorable people understand that there is no wrong in wresting one's property from the pilferer by whom it has been filched, or in compelling a highwayman to yield up a portion of his ill-gotten booty. When such a character resorts to the whine of injured innocence and tries to work up righteous indignation, because he has been bereft of his stolen property, the culprit can only become an object of contempt.

The shoe is now on the other foot. To those who are seeking a treat in the line of pharmaceutical acrobatics, we recommend that they observe the antics of the wearer.

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The harsh treatment received in the October BULLETIN by a certain advertising circular which is distributed in the guise of a regular journal of pharmacy, calls forth complaint from one of our subscribers (see page 505) that injustice has been done the proprietor of the pink sheet. It is not rigidly true, we are told, that "he never originated a thing in his life," for his rôle as either author or sponsor of Sweet Quinine is well known, and figures most conspicuously in the proceedings of a certain American Pharmaceutical Association. His devotion to the interests of pure pharmacy was so disinterested and exalted that it cost him his membership in that society.

Moved to contrition by the consciousness of our injustice, we were about to open the flood-gates of tearful apology, when a communication was received from another source, claiming for a certain physician in the interior of Michigan the glory of originating Sweet Quinine, it being alleged that the "invention" was all his own, and the agency of the manufacturer in no respect an initiative. Under the circumstances we must repress our penitential effusion and await a more fitting opportunity for assuring the Sweet Quinine hero of our distinguished consideration.

⁂

The truth that of all good things sound, sage advice is the greatest drug—nay, a weed—on the market, must be regarded as the saddest sign of man's ingratitude. In the last number of the BULLETIN we ventured to counsel the proprietor of a certain pink sheet to change its motto and thus lessen the glaring absurdity of its present pretensions. Our advice was not received in good part. The proprietor of the p. s. is very wroth. He has grown red in the face. He choketh with anger, and his puny wrath issues in abuse. Ah, well, the Frenchmen are right: A man may forgive your malice, but your benevolence—never!

The prop. of the p. s. cannot sleep, lest someone steal his laurels. He must needs avow himself; and in the *Pharmaceutical Era* of Nov. 1st, page 421, to which we refer our readers—reluctantly foregoing a reproduction of this lengthy contribution to pharmaceutical humor, since life is short and space is money—the proud champion of the non-secret infamy spreads his banner, patches up the Sweet Quinine mantle of his sire by a discreet silence, and polishes his halo for yet another exhibition. The spectacle is edifying, but to do justice to its humorous aspects would tax the powers of Mark Twain or Bill Nye.

But Pecksniff reaches the very limit of comedy when he drops into Holy Writ, thus recalling the popular allusion to the "Devil quoting Scripture," and the later thought of the immortal bard:

> "What damned error, but some sober brow
> Will bless it, and approve it with a text,
> Hiding its grossness with fair ornament?"

Yes, truly, he manufactures non-secrets, and is proud of it! Not so proud, however, not so insensible to reproach from honorable pharmacists, not so callous in conscience despite years of moral induration, that he does not shrink and writhe under the reproach of success bought at the cost of general contempt for his methods—that he does not quiver with shame and seek to screen himself behind recrimination and mendacious misrepresentation whenever allusion is made to the episode which finally drove the founder of his firm forth from reputable pharmaceutical society, which to-day renders him the Ishmaelite of pharmacy against whom every man's hand is turned, and which yet closes to him the door of every pharmacal organization.

Acting upon our recommendation to peruse this literary curiosity, the reader will at least be the gainer in one conviction: That genuine and upright success can always be measured by the number and ferocity of the carrion tribe by which it is assailed; that attacks from odious and petty rivals must always be the lot of any house which stands foremost in reputation and magnitude—a Gulliver amidst the Lilliputians; and that as individuals are judged by the friends of their social hours, so commercial houses are often justly distinguished by their enemies, and may glory in the despicable character of their traducers. "Tell me who hates thee, and I'll tell thee what thou art!"

THE PROGRESS OF SCIENCE.

A glance at history and the strides made by medicine from the Middle Ages down to the nineteenth century, reveals a progression truly wonderful, yet hardly to be compared with the advances made during the last fifty years. It is within the memory of the present generation when the armamentarium proper of the physician consisted of a few crude drugs of limited and uncertain resources, reinforced by leeches, cups, blisters, setons, moxas and, chief of all, the lancet!

Witness the change wrought by the rise of chemistry and physiology corresponding to the retrocession of venesection—the introduction of anæsthesia, general and local; the almost innumerable list of sedatives, analgesics, and hypnotics, to say nothing of the host of remedies of general application; the active principles discovered, along with accurate methods for their determination! Thus pharmacy has been compelled to keep stride with "physic," being drawn into closer and more intimate relations, until now the twin professions are interdependent. Pharmaceutical chemistry has evolved the latent powers of drugs, modes of concentration and palatable preparation; medicine has then taken up the problem and studied their action, physiological relevancy in health and disease, their dual phenomena developed by varied and applied dosage, and the physio-chemical changes resulting from introduction into the living economy, all of which tends to bring the practice of medicine much nearer an exact science, and enables the medical man to combat disease with reasonable hope and prospect of success. And to what is this advancement due? It is not to the efforts of any one individual, nor is it the product of any one year, decade, or era, but the gradual, insensible growth of science, the aggregation of contributions by thousands of experimentors. Science, as it rolls irresistibly onward, attracts, assimilates, and renders homogeneous the different ideas and discoveries. Individualities are forgotten or obliterated, and recalled only as reminiscences. Thus knowledge is universal; at its best it is only the evolution and development of the past, with old ideas and forms newly expressed, which the printing press records and disseminates broadcast.

It must be conceded then, that by taking advantage of the accumulated and available resources of medical knowledge and deriving formulæ therefrom (ostensibly for the use of the medical profession and the benefit of the unfortunate, but in reality to the making of pharmaceutical compounds), any claim to proprietary right or interest therein is untenable. It is an attempt to block the wheels of progress to personal ends, and to force a tax upon illness and suffering. Yet to-day the press, lay, religious and medical, is being flooded with advertisements and announcements of "sole" proprietorship in this, that, and the other averred remedy, the claims made being in every respect baseless except upon the ground of sophistry.

A recent exchange gave editorial utterance to the following regarding the attempt of an alleged Washington neurologist to establish a proprietary right in certain preparations:

> "Responsive to that conservative principle which has been called the first law of nature, he had the shameful temerity to protect his business. The impropriety of this is so flagrant that it is spectacular; in fact, its escape from possible turpitude is so narrow that for once the comparative value of a hair has been destroyed. What if Dr. ——— did know that the only way under heaven to provide for the purity of his ——— ———, was to limit their production to a particular manufacturer who, because of his limitation, could afford to be honest—what if he did know that in taking this course he was protecting the people and the profession no less than himself—what if he did know that such a course was confirmatory of all sound business maxims, was in line with the modern professional trend, and was from every moral and common-sense point of view, right? What if he did know these things—he also knew that this expression of mild sanity was atrociously uncodic—he knew that he was outraging the gentle spirit of that barbaric relic under whose sacred ægis he is supposed to live, move, and have his being. . . . Don't you know, Dr. ———, that you are a slave to the code, and that any medical discovery or innovation you may make belongs to the entire world, and that it is no more your property than it is Jim Crow's?"

Can anyone for a moment honestly and conscientiously uphold or accept such drivel? Can it represent aught other than a medical birthright sold for the vilest mess of pottage? From what source did Dr. ——, before mentioned, derive his inspiration? Was it original? Certainly not! Grant for the moment that his decoction of ox-brain is of wondrous value—where did he get it? Where acquire the knowledge which rendered possible his inventive (*sic!*) effort? Does he ignore entirely the sources of individual education and experience?

"The great evil of quackery and secret remedies," says Sir G. Blaine, "is the false confidence which it inspires to the exclusion of other and better remedies. Again, the absurdity of using drugs at random by drawing them from the wheel of fortune at the proprietary-medicine shop must be obvious—yea, more; blindfold medication is both pernicious and dangerous, doubly so when employed at the solicitation and in the interests of the vendor."

Too often do we ignore the fact medicine and pharmacy should be entirely distinct from the license or inspirations of trade. What may be appropriate for the grocer or the hardware merchant is far from seemly for the pharmacist or the physician, who both derive knowledge from the storehouses of the past. The ordinary merchant has no such source for his information, hence may not be denied proprietorship in inventions produced as a result of personal experience.

The manufacturing pharmacist who is fully aware of these conditions and as well of his obligations, has no valid claim in a moral sense to any proprietorship in an aggregation of remedial agents. If he ignores his obligations to science and patents a combination, or introduces it under a trade-marked and protected title, he places himself in a most unfavorable light as compared with the ordinary patent-medicine vendor. To quote the language of a recent medical critic: "If there is a difference, it is in favor of the latter, for he is open and aboveboard, while the former has 'stolen the livery of Heaven in which to serve the Devil.'"

CULPRITS IN THE ROLE OF ACCUSERS—A RETROSPECT.

The last meeting of the N. W. D. A., now only a pleasant memory and a creditable chapter in the history of that organization, despite its complete success from every serious and social point of view, was not devoid of a certain current of baffled intrigue. The most amusing and edifying of all the effusions in which the frustrated schemers have sought consolation for their Waterloo, is to be found in the October 25th number of the *Shipping and Commercial List and New York Price Current*, reproduced for the entertainment of our readers on page 511 of this BULLETIN, and in a prolix editorial appearing in the October 15th number of the *Pharmaceutical Era*.

The subject merits a few brief words of explanation. When in 1890 the N. W. D. A. convened in Washington, Mr. T. H. Hinchman, of our city, presented, in the name of his local colleagues and of other drug interests, a warm plea on behalf of Detroit as the next meeting-place of that body. Beyond any question, the major number of the regular jobbing members were then in favor of selecting Detroit. Violent and successful opposition was, however, encountered from a certain contingent in the Association, led, instigated and animated by the combined manufacturers of pharmaceuticals, who had vowed that never should Detroit receive the coveted honor while it remained the home of their most formidable and envied competitor.

This incident was big with significance and instruction for the real, legitimate and jobbing members of the Association. It showed plainly that a certain ring of manufacturers—people whose membership had never been contemplated by the founders of the original Western Wholesale Druggists' Association, who were admitted only on sufferance, who in reality had precious little in common with the wholesalers of the land—had thrown modesty to the winds and, without regard to the demands of tact and decency, were in league to rule the ballots of the body and to grind the axe of their united hatred for the Detroit manufacturer.

And for a time the combination certainly "ruled the roost." The same performance was again resorted to at Louisville in 1891, with the same result; for the claims of Detroit were again opposed and silenced through the engineering of this impudent lobby, and, with a handful of votes from a few jobbers adverse to Detroit, Montreal was chosen.

The readers of the BULLETIN have been informed how the time-honored and successful tactics of the lobby were furbished up at Montreal, and how in the final vote the wholesalers of the N. W. D. A. asserted their preference for Detroit, and finally muzzled the meddlesome intruders who had twice thwarted the wishes of the legitimate members and had forced their own scheme upon the organization.

The Detroit meeting occurred in the fullness of time. Was it successful? Most emphatically. Ask any attending jobber and receive his assurance (echoed by every colleague) that never in the history of the N. W. D. A.—despite the distressing and ominous panic everywhere prevailing—was there *such an attendance, such close attention to business, such uniformly large, unheard-of quorums, or such a volume of important matters dispatched.* Never, moreover, was there such a complete absence of meddlesome impertinence from intruding interests.

The social features of the meeting were characterized by the same scrupulous delicacy on the part of the local entertainers, and the same desire to refrain from officious interference with the adopted programme of diversions—unless, indeed, we may range under this odious heading the receptions tendered by Mr. Frederick Stearns and Mr. D. O. Haynes, which formed no part of the pleasures provided by the Committee. With these two exceptions, no public entertainment of any kind was proffered by the citizens of Detroit. The few private yacht parties were in every respect studiedly unintrusive, and so arranged as not to conflict with any business meeting.

That the foregoing represents the truth, the whole truth, and nothing but the truth, will be warranted by any candid wholesaler; is explicitly affirmed by Mr. A. S. Brooks, Chairman of the Entertainment Committee (whose written assurance, as published in the *Oil, Paint and Drug Reporter* and in the *Shipping and Commercial List*, appears on page 511), and is re-asserted with indignant emphasis by a host of Eastern jobbers in a series of interviews with a representative of the *Oil, Paint and Drug Reporter*, reproduced on page 512.

One member of the N. W. D. A. declares without mincing matters: "A certain meddlesome individual [the publisher of the *Pharmaceutical Era*, without doubt] has had a great deal to say in his paper about the conduct of the N. W. D. A. both before and since the meeting. The less attention paid to such an individual, the better for all concerned."

With this side-light thrown on the animus and origin of the criticism in the New York paper, the funny part of the whole situation will become obvious. Here we have a league of people tolerated on limited sufferance by the legitimate members of the N. W. D. A., working every wire and forcing every conceivable method of intrigue for the gratification of their private malice—seeking to monopolize and pervert the organization—yet yelping, whining, and showing their teeth because their brazen machinations have been baffled! To wax merry over the discomfiture of others is never gracious; but even a Christian may be pardoned a little glee at such a spectacle and a little contempt for the thwarted duplicity which ascribes to others the sneaky tactics and subterfuges which it has vainly brought to bear.

AN OFFICIOUS MEDDLER.

> "I will be hang'd, if some eternal villain,
> Some busy and insinuating rogue,
> Some cogging, cozening slave, to get some office,
> Have not devised this slander."

One laughable aspect of the charge made by the *New York Shipping List* in connection with the last meeting of the N. W. D. A.—based, according to its own statement, on information obtained from the *Era* man—calls for brief mention in so far as it involves the *Oil, Paint and Drug Reporter.* Having read the allusion in another column to the triumphant defense of the *Reporter*, and the neat, effective manner in which the silly slander is trampled down by the wealth of evidence adduced, the query arises, "Why, Mr. *Reporter*, so provoked?" At first reading of the charge we plumed ourselves that *we* were the mighty trade journal alleged to possess the convention, body and soul, and we were swelling our chest in conscious power as a new journalistic Napoleon, when it dawned upon our egotism that not the BULLETIN, alas, was the object of the compliment, but our elder contemporary—now the envied focus of aspersions for which we should not have been loath to serve as target!

The artistic manner in which the *Reporter* jumps all over the meddler and his senile tool, wipes up the earth with his veracity, and scatters his credibility to the four winds of heaven, would do credit to any ornament of the P. R. But what heavy artillery wasted on a puny foe! The *Oil, Paint and Drug Reporter* is over-sensitive; it should not mind the rattle of these pea-blower missiles upon its armor; but, truly, our esteemed contemporary is a terror in its wrath.

That the *Era* meddler should assail a prominent manufacturer is not surprising; it tickles his advertisers and adds to his capital as a solicitor; and his motive in provoking slander of a rival journal is equally transparent: the enterprise, popularity, and ability of the *Oil, Paint and Drug Reporter* must always remain the despair of the horde of journalistic pigmies. We cannot reasonably expect the tribe to stifle their odious envy, and, in all probability, they will continue to falsify where they cannot emulate.

PRACTICAL PHARMACY.

WHAT ARE THE BENEFITS, AND WHAT IF ANY THE LOSSES, TO THE COMMUNITY AND TO PHARMACISTS BY REASON OF THE EXISTENCE OF PHARMACY LAWS?*

BY S. A. D. SHEPPARD.

That the education of its members is a benefit to a community is now such a self evident proposition that it may be considered an axiom, and not a question for the settlement of which it is necessary to bring forward the proofs.

Compulsory education for those in early life is one of the fundamental principles on which alone a free and enlightened government can be founded.

The enactment of a pharmacy law by a State is a form of compulsory education.

All intelligent persons recognize that there is now going on, throughout the civilized world, an evolution of society, and that this evolution, like all those that have preceded it, is upward.

Pharmacy laws are one of the *very manifest signs* of this upward movement in a community—a movement toward the better protection of health and life—a movement for carrying this compulsory education beyond the point reached by the common schools.

That pharmacy laws have been enacted in almost every State of this free country, where the people rule, is certainly a proof that the people feel that such laws are helpful to their best interests, are highly beneficial to them, otherwise this form of legislation would not have progressed as it has; and when intelligent communities over and over and over again assert, by their free and untrammeled votes, that a certain kind of legislation is of benefit to them, the argument is a strong one in favor of the statement that such is the fact.

Now, what are these benefits that the people expect?

Pharmacy laws are a direct benefit to the health of a community.

They are also an indirect and, perhaps, a direct benefit, because they help to place one of the classes of men that make up the community on a higher plane of intelligence.

The movement for the enactment of pharmacy laws has not been hasty. Commencing about twenty or more years ago in this country, in good earnest, it has gone steadily onward.

The people in the States where only recently such laws have been enacted have had the experiences of the people in other States to guide them in their action. Thus they have not acted hastily, and it is very significant that pharmacy laws are not easy of repeal.

The people of a commonwealth having for a term of years known the benefits of such a law, appreciate it and become firm advocates of such legislation.

The experience of Massachusetts is probably similar to that of all. We are strengthening our law. No one thinks of repealing it. On the contrary, the sense of our legislatures year after year is always now in favor of the law, because it is so very manifestly a benefit to the public health.

This, then, is the great argument on the people's side. Pharmacy laws are beneficial to public health, because they provide more intelligent dispensers of medicines. A premium is thereby put on that form of intelligence which is directly instrumental in helping the sick to regain their health.

That the candidates for registration as pharmacists are stimulated to exertion and study in such degree as could not otherwise be attained, is shown by the experience of pharmacy boards. Men try and try and try again for the coveted certificate, and between the trials they work earnestly to learn those things that are so necessary to make them safe men to put in charge of drug stores. It is for their financial interest to do so—and all this work and study are the direct result of pharmacy laws, because those who study for the love of it are not included in the class here referred to.

Further, many of the unsuccessful applicants at the doors of the pharmacy boards, at last tire in their efforts and leave the business, to seek a livelihood in some other way in which they are better qualified to work.

This certainly is also a benefit to the community.

As men become more intelligent and populations become more dense, a necessity arises for many things not known in former times. The specialist in every branch of work is one of the growing and very prominent factors in modern life. The community demands that each man shall understand his particular work more thoroughly than communities ever before required, and as men thus grow more circumscribed and thorough in their labors they demand that in all matters pertaining to life and health the State shall label those workers who are most competent to serve them; and so we find the certificate of the State here, there, and everywhere, telling us that this man is a competent engineer—that such an one is a skillful dentist—and so on through the list.

Surely pharmacy is a branch of work where the label of the State that indicates competency is needed as much and perhaps more than in almost any other branch.

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* Read before the forty-first annual meeting of the American Pharmaceutical Association.

What are the benefits to pharmacists?

Pharmacy laws are the same benefit to pharmacists that compulsory education of the children is to the people as a whole. These laws necessitate a much higher grade of education and training, and in the generations of pharmacists that are to come their effect will be very clearly seen, and the benefits arising from them will be more fully appreciated than at the present time when such laws are comparatively new.

The younger men of to-day are much better fitted for their work than those of their age fifty years ago, and to a certain extent at least this is due to the compulsory pharmaceutical education and training brought about by pharmacy laws.

It is true that clerks are scarcer than formerly and command higher wages. This indicates advancement in the character and value of the employees. At first thought some pharmacists may consider this not to be a benefit, because they pay more for the labor of their employees, but sober second thought will lead the intelligent man to think otherwise. His life work is perforce put on a higher plane than formerly. The discipline of the shop is steadied thereby; there are not so many changes. We get better clerks, and we keep them. They are better paid, do better work, and are better satisfied with their positions than formerly; and should an accident happen, the pharmacist has a much stronger case before his patrons if he can show by official record that he keeps competent clerks—men who have been registered by the Board of Pharmacy.

It seems to be one of the influences that will help modify and direct the change that is surely coming, viz.: the doing away with the small, cheap store—for the business of the future *must* follow the great trend of the times, and be done by large central stores in a great measure, and these pharmacy laws are guards to keep this coming movement in a somewhat reasonable shape.

Again, pharmacy laws are of benefit to pharmacists, because they are powerful agents in the work of keeping the liquor-sellers out of our trade. This is one of the crying evils of the business, and everything that helps even in a slight degree in this direction is a very decided benefit to every good pharmacist.

ANALYSES OF SOME ETHICAL PATENT MEDICINES.*

BY H. W. SNOW, PH.C.

It is not proposed in the following paper to give elaborate details and methods employed for this work, but rather to give the results of work. It is sufficient to say that the methods employed were those generally considered reliable or in special instances had been demonstrated by my own experience to be satisfactory and accurate. It is hoped that in these reports you will find interest and possibly instruction, and if so, then my object is achieved. Properly speaking, the ethical patent medicine line may be broadly divided into two divisions, viz.: those having a reason for existence, and those having no true therapeutical reason for existence. For instance, Cascara Cordial in its day and Cascara Aromatic at present fill a real need and offer advantages for the administration of cascara not possessed before their introduction. On the other hand, we can point to scores of proprietary articles of the Bromidia, Tongaline, and Listerine type having very little to recommend them for a permanent place in pharmacy.

Let us take Lacto-Peptin for instance. It claims to be a happy combination of the chief digestive agents of the alimentary canal and in proportions practically the same as they occur in the human system. This is a good handle to use commercially, but physiological chemistry has some long strides to make before it can yet furnish data making such a preparation even partially true to any such claims. The proprietors give a formula for their article; and desiring to know something more regarding it, I made a preparation of a good quality of pepsin, pancreatin, diastase, lactic and hydrochloric acids, and sugar of milk, in the proportions claimed for Lacto-Peptin. I then made a series of comparative tests between this article and the proprietary preparation, and found by strictly parallel work that in digestive power on albumen it contained a pepsin of about 1 to 500 power, against a 1 to 100 pepsin used in the sample made by myself. In its action on milk it was less than one-twentieth as strong as the check sample, and in its action on starch paste equally unsatisfactory. The natural inference from the work done forces a conclusion that it contained no pancreatin worthy of the name—is, practically speaking, a very ordinary quality of saccharated pepsin for which you are asked to pay $10 a pound when labeled Lacto-Peptin. The same company puts up a so-called Solution of Lacto-Peptin said to contain 32 grains of lacto-peptin per fluidounce. Using enough of this solution to correspond to ¼ grain of pure pepsin, and trying its solvent power on egg albumen, showed that it practically had none, while a solution of the check sample, made as nearly like the "patent" as was possible, gave good results. Still another preparation of this company is the Syrup of Lacto-Peptin and Phosphates. It is said to contain lacto-peptin and 8 grains each of the phosphates of lime, iron, potash, and soda. The taste of the article alone is sufficient evidence of the falsity of this claim, as it is a chemical impossibility to put in calcium phosphate in that proportion without an acidity much greater than that of the "patent." An estimation of the combined phosphates of lime and iron showed only about one-half grain per fluidounce.

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* Read before the Nebraska Pharmaceutical Association.

Bromidia was examined by Lyons some years ago, and since then I have had opportunity to verify his work. The conclusions reached were, that it contained scarcely two-thirds as much bromide of potash and chloral as claimed, and no cannabis indica at all. On the other hand, there is evidence to lead one to believe that it contains narcotics not named in its alleged formula. Likewise Iodia, claiming potassium iodide 5 grains, and iron phosphate 3 grains per fluidrachm, with vegetable alteratives and aromatics. Both the writer and Lyons failed to find more than about three grains of the iodide and only traces of iron in each drachm. Lithiated Hydrangea is said by its proprietors to contain green hydrangea root and 3 grains of pure benzo-salicylate of lithia in each fluid-drachm. If this means anything at all it means 3 grains of the combined salicylate and benzoate of lithium. Careful work failed to show but little more than one-seventh of this amount.

The claims for Listerine put forth by the same company are familiar to you all, but these claims being rather vague it is difficult to say more than that it can hardly be credited with any very satisfactory antiseptic value.

Probably Elixir of Iron Phosphate, Quinine, and Strychnine has troubled more pharmacists than any other pharmaceutical preparation, and certainly, speaking for myself, I have had a goodly share of discouraging "Now you have it and now you haven't." Finally, an examination of Wyeth's article developed the interesting fact that it contained no iron phosphate. Limited experiment pointed to the citro-chloride of iron as the probable salt, and certainly when properly handled this article gives good results, but even in this a very careful adjustment of the citrate of potash is essential. Too little of this chemical and the elixir is likely to darken, and once dark you cannot restore it. Too much and your quinine is very likely to precipitate as insoluble citrate. Iron lactate is also a good form for exhibiting the iron in this elixir.

Maltine and Cod-Liver Oil was at one time claimed on the label to contain 30 per cent. by volume of cod-liver oil. Trömmer's preparation is claimed to contain 40 per cent. of oil. A series of analyses of these two articles by the Ohio State Board of Health showed them to fall far short of this, and the report of the Committee on Adulterations of the New York State Pharmaceutical Association quoted further work to indicate that they fell respectively to 12 per cent. and 8 per cent. of oil. It is not likely that this smaller amount was added because of questions of price, as malt extract is worth more than cod liver oil, but the taste must be pleasant at any sacrifice, and that principle is undoubtedly at the bottom of the "cut" on the oil. Again, we have the emulsions of cod-liver oil. Every pharmacist understands that an emulsion of an oil is administered from a double motive—palatability, and to insure a more perfect absorption. These two features bear an intimate relation to each other, and the fineness of the division of the oil is the chief element. Microscopical examinations of an emulsion offer a ready means of judging it from this standpoint, and the following cuts will give something of an idea. The cuts represent the emulsion magnified 325 diameters.

Fig. 2 is Phillips' emulsion and was found to contain 7½ fluidounces of oil per pint. It is a gum emulsion and contains two ounces of glycerin to the pint, and some sugar.

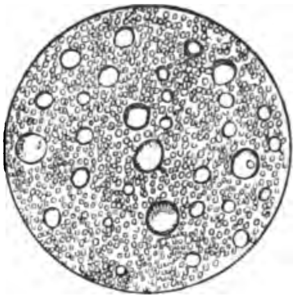


FIG. 2.

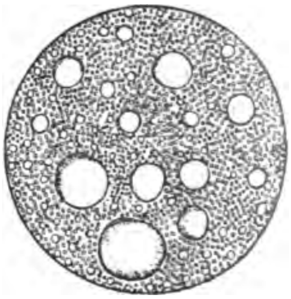


FIG. 5.

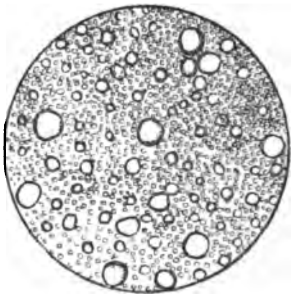


FIG. 3.

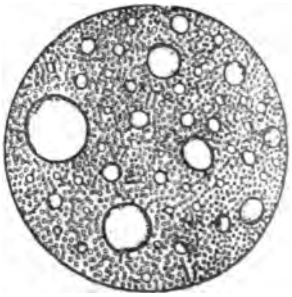


FIG 6.

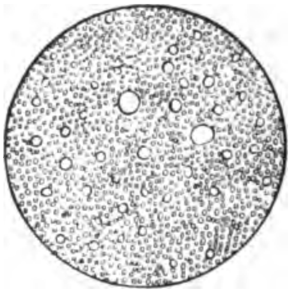


FIG. 4.

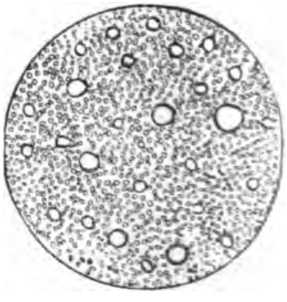


FIG. 7.

Fig. 3 is Hydroleine. This emulsion shows many peculiarities. For instance, it is precipitated by dilute acids but not by alcohol, showing that it contains no gum and is on the other hand either a soap emulsion or has been treated with an alkali, which amounts to the same thing. The oil shows the peculiarity that after its extraction by ether it forms a partial emulsion on shaking with pure water. The proprietors claim that the oil has been predigested by the aid of pancreatin, but as I have never yet found a pancreatin worth anything at all as an emulsifying agent, and never met anyone who had, I prefer to doubt this claim. I do not regard such an emulsion as a desirable form for the administration of cod-liver oil, because it curdles in the stomach immediately on contact with the gastric juice, and is no better tolerated than a plain oil. I have known it to be repeatedly thrown up by patients using it. It, however, contains the unusually large proportion of 10½ ounces of oil to the pint.

Fig. 4 is an emulsion formerly offered the trade, but I believe now withdrawn from sale. It contained 7 ounces of oil per pint, and some glycerin. I regard it as probably the best all-round emulsion then offered, but it did not keep very well.

Fig. 5 is Scott's emulsion, and was found to contain 6¾ ounces of oil to the pint and large amounts of glycerin. The emulsifying agent is certainly not acacia, and owing to the small percentage of gum (2.1 per cent.) it is highly probable that Irish moss was used. In my experience Irish moss, though it holds an oil up well and prevents any separation, is not, from a true therapeutic standpoint, a desirable emulsifying agent, as it does not seem to secure as minute a division of the oil as can be obtained from acacia. I have always been inclined to think that a judicious combination of the two would prove very satisfactory.

Fig. 6 represents what might be termed a good emulsion made in a mortar, and Fig. 7 the same emulsion after having been vigorously beaten with an egg-beater. An egg-beater is useful towards the end of the operation, but, according to my experience, its utility is doubtful in the earlier stages.

Granular effervescent salts come up next for consideration, and Bromo-Caffeine naturally heads the list. For reasons not necessary to give here, and which I must confess are largely of a personal nature, this article has always been obnoxious to me, but I give the results of an examination made nearly three years ago, without bias or prejudice. The article claims to contain one grain of caffeine hydrobromide in each heaping teaspoonful, and this is equivalent to about one grain in eighty grains. An estimation of the caffeine shows it to be present in about that proportion, though the ease with which chloroform extracts the alkaloid from the dry powdered granule is practically evidence to the fact that the caffeine is in the form of the alkaloid and not the hydrobromate. From a chemical or therapeutic standpoint it is probably a matter of indifference which is used, but two or three years ago, when caffeine alkaloid was about $8 a pound, and hydrobromate was worth about $40, it was commercially a matter of consequence. The proprietors make no mention of the bromide (probably bromide of potash) present in this article. In fact it contains bromine equal to about four grains of bromide of potash in each heaping teaspoonful.

Magnesia Citrate in granular form is no longer proprietary in character, but it is worthy of note that Bishop's salt, which made the style, contains magnesia sulphate and not the citrate. Several American makes likewise contain the sulphate, and Parke, Davis & Co.'s salt was the only one which I found to contain a true citrate. Aside from the question of sincerity in claims, I would rather have a granule made from the sulphate than one made from the citrate. It is more satisfactory all round, and, after all, granular effervescent salt is nothing more or less than a granulated seidlitz powder.

I had on hand a number of other analyses, but I find that things are stringing out longer than I anticipated, notwithstanding the condensed form in which I have endeavored to present the matter, and will leave the remainder for some future paper.

WOULD IT BE A GAIN OR LOSS TO PHARMACISTS TO COMPEL APPRENTICES TO PASS A BOARD OF PHARMACY EXAMINATION ON THEIR GENERAL EDUCATION BEFORE PERMITTING THEM TO BEGIN WORK IN THE DRUG STORE?

BY ROSA UPSON, M.D.

At first glance, the question upon which I am asked to express my opinion would impress every thinking, educated pharmacist as decidedly a gain and an improvement over the old method of taking apprentices on trial. Seriously considered, would it be *either* a loss or gain?

The plea for higher education in all walks of life, all professions, all branches of business industry, is becoming universal, and is to be commended. There is always a need to plead for a better education in *any* profession, in any trade, any calling, no matter how lowly. No one can for a moment doubt that a better educated class of tradesmen, artisans, and laborers would materially increase our resources and mitigate many hardships.

Pharmacy is a science, and a far-reaching one. It overlaps the kindred sciences of botany, chemistry, medicine, and philosophy. A true pharmacist must be fully imbued with a professional spirit, and to do this he must possess a general education equal to that of any other man, be he theologian or scientist.

The life of every human being is at some time during its existence placed in the hands of physician or pharmacist, or both. It often takes but one mistaken dose to bridge the river which separates us from the great Beyond. This being true, how necessary it is that every person who would enter a profession of such great responsibility should be clear-headed, quick-witted, and capable of absorbing the plain every-day minutiæ of an English education before attempting the intricacies of scientific pharmacy.

There can be no better time for me to plead for higher education than the present, when representatives from all the nations of the earth are gathered together to witness the gigantic strides civilization has made within our borders, and to investigate the free institutions of this great and grand Republic, foremost among them our public school system.

With the advantages offered in this country, I claim that no man or woman who has the ambition to become a professional person has a *right* to present himself to us for a position of such great importance if he has so far forgotten his American pride as to have neglected that which makes the man and afterward the money—a common-school education.

While it could be no loss to the pharmacist to compel the applicant to pass an examination before the board of pharmacy, it is a question whether or not it would be a gain. Were the boards of pharmacy in the various States occupying that position by reason of fitness, instead of being appointed as many of them are by the Governor, with political influence many times solely the basis of appointment, I might look upon it in a different light, and as one move in the right direction; but it is a lamentable fact that there are many pharmacists acting on boards of pharmacy to-day, whose education, outside of the practice of pharmacy, with a smattering of the theory, is very meagre.

I remember once sitting at a hotel table in company with a commissioner of pharmacy and several other gentlemen, when one of them in conversation made use of a common Latin phrase. The commissioner, not understanding the expression, could not appreciate the laugh that went round, and asked me what it meant. I expressed my surprise that a commissioner of pharmacy should not understand so common a Latin quotation, when he remarked that he "did not know the meaning of a single Latin phrase or termination, and saw no use for them anyway."

To me, the farce of an intelligent young man or woman going before such a man to pass an examination as to their educational fitness to enter upon the duties of a drug clerk, seems like child's play.

Each pharmacist should be sufficiently well educated to be able to give this examination himself, and by so doing have the double advantage of judging something of the disposition, deportment, and characteristics of his victim. The manner of reply to questions often shows more of the depth of knowledge than the language used, and I believe every pharmacist should constitute himself a committee of one to pass upon the merits of his would-be employé.

The drug trade is an exacting one, and the druggist often has his patience tried, and must continually watch his self-control. His own welfare demands that he control his temper under trying ordeals, and present to his customer and the world the polish and culture of the gentleman.

In legislation there is a panacea for many pharmaceutical ills, but until States make laws whereby members of the board of pharmacy shall be chosen for their fitness, the standard of educational qualifications will not be materially increased. When only educated pharmacists are allowed to be members of boards of pharmacy, irrespective of politics and a long list of wire-pulling backers, only educated men and women will conduct our pharmacies, and only people with an educational foundation will apply for positions as drug clerks, when the goal can only be reached by hard and persistent brain-work, as well as manual labor.

Then there will be no need of this preliminary examination, because all this will be provided for in the public schools.

CHEMISTRY.

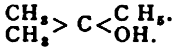
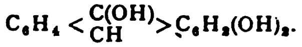
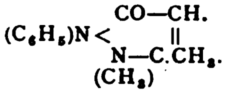
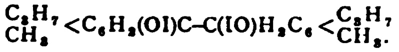
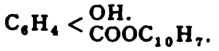
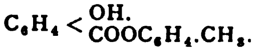
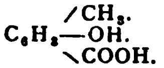
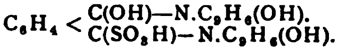
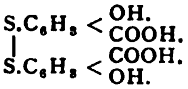
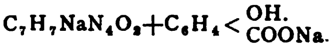
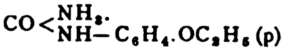
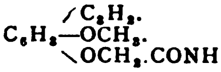
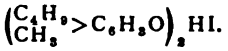
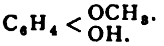
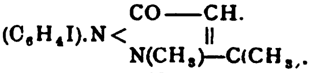
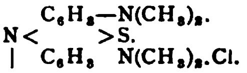
MORE CHEMISTRY NEEDED—A PLEA FOR THE EXTENSION OF THIS BRANCH OF A PHARMACIST'S TRAINING.

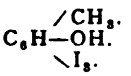
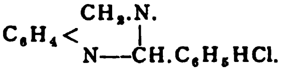
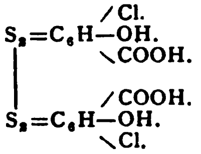
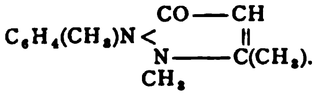
BY ALFRED R. L. DOHME, A.B., PH.D.

"Keep abreast of the times," is the cry on all sides and everywhere in this last decade of the nineteenth century. Any person who fails to follow the teachings of this popular edict, be it in science or business of any nature, soon becomes a back number, and is regarded more or less as a fossil. It is the age of advancement and of progress, and to be successful a man must advance and progress with the age. Science is advancing with giant strides; veritable revolutions are taking place in all branches of it, notably chemistry, and unless a man follows closely the work that is being done he soon finds himself in a bog where he sees confusion on all sides and no landmark or guidepost in sight. Pharmacy is advancing, and the advance is along the line of the chemical cohorts; chemistry is encroaching upon her parent science, and threatens to make a serious fight for supremacy in the eyes of both physician and pharmacist. It is not much of an exaggeration to say that the percentage of prescriptions written by physicians and filled by pharmacists that embody in them chemicals pure and simple, though very far from simple in their constitution, is increasing in arithmetical progression. Every day almost sees a new organic compound or mixture of organic compounds ushered into existence, and just as truly does every day see an increase of them in number on the prescription files of the pharmacist. It is no longer only quinine, strychnine, morphine, cocaine, antipyrin, and other alkaloids, besides inorganic chemicals, that greet him; no—the names have increased both in number, length, and complexity, as piperazine, diethylsulfon-dimethyl methane, chloralamide, phenyl-dihydroquinazoline-hydrochloride, phenylacetamide, di-isobutylorthocresol iodide, etc., evidence. Where is the true cause of this innovation in the pharmacist's curriculum to be found? Advance of knowledge and improvement of scientific methods, as well as the development of pharmacology as a distinct science, are the true causes. Pharmacology studies the effect of known substances, preferably individuals, upon the various organs and chemical tissues of the animal body. Its aim is to make medicine an exact science, as nearly so at any rate as that is possible, and in order to do so it proposes to employ exact scientific methods and exact scientific material, *i.e.*, pure chemical substances. It would be quite a complicated and hopeless problem from a scientific standpoint to attempt, for instance, to study the pharmacology of fluid extract of opium, because there are so many substances at work all at once producing the observed effect of the administration of a dose of this medicine that it is absolutely impossible to tell positively what has caused the same. When, however, one substance of known purity and composition, and if possible known constitution, is administered, and certain effects are produced, we have in hand a problem the premises of which are known tangible facts, and we can draw definite and valuable conclusions. The branch of chemistry known as the Chemistry of the Carbon Compounds, or organic chemistry, is an unlimited one according to the chemical laws and theories obtaining to-day, and is multiplying and increasing at a marvelous rate. One has but to cast a glance at the latest, newest trench in the breastwork of chemical journals of to-day to see what an enormous amount of work is being done in the line of producing new compounds. In every instance almost the constitution of the new comer is determined, so that our family is fully named, analyzed, examined, and described structurally, physically, and chemically. More than that, it is now getting to be general to describe the new compounds pharmacologically by testing their effect upon animals and human beings. Two factors have brought about this result, viz.: the probability of the compounds being of value, first, medicinally, and second, financially—the chemist being no exception to the rule in most cases, and joining in the universal race for rhino. The past shows only too well what a chance discovery in this branch of a chemist's work may be worth to him, and in more ways than one. The natural result of this voluminous rush into existence of new compounds is that some day, perhaps not far off, there will be known a chemical substance possessing a definite composition, definite properties, and a definite name, for every known disease. The physician will of course have to be instructed fully as to the composition, dose, properties, names, etc., of the compounds, and what is true of the needs of the apothecary in this line is also true of him. That the pharmacist and the physician should in future be more thoroughly and extensively versed in organic chemistry than they are at present, is, we think, very evident. Does it not seem very evident to every teacher of chemistry in our colleges of pharmacy, to every studious and scientific pharmacist, and to the State Boards of Pharmacy the country over, that it is incumbent upon them to meet this exigency and take the bull by the horns by increasing the amount of time spent on organic chemistry, by instituting experimental work in the laboratory and drug store in organic chemistry, and by becoming as thoroughly acquainted with the properties, composition, etc., of antipyrin, phenacetin, etc., as they are with those of epsom salts, potassium chlorate, etc., even if the terms and courses of study at college have to be lengthened?

If the State were made aware of the fact that men were handling daily, and in unlimited quantities, medicaments of which they knew nothing save their names perhaps, and possessed not the means of acquainting themselves with anything further about the substance, it seems very probable that it would be the State's duty to interfere and adopt stringent laws on the subject. That this is not necessary at present is also clear, because we are only on the veritable threshold of what is to come—of the time when these so-called "new remedies" will number not dozens or hundreds, but thousands perhaps. It is a very serious matter and an irrepressible conflict, because no observant pharmacist or chemist can deny the certain and steady increase of these "new remedies," nor the evident preference of pure crystalline compounds to extracts and composite mixtures. In the writer's opinion the pharmacist of five years hence will have to be as well acquainted with the intricacies and beauties of organic chemistry as he is now with those of inorganic chemistry. Whether or not the United States Pharmacopœia will make any or all of the "new remedies" official, is a question that cannot be answered at present, but does not much affect the problem under consideration, for the said remedies will be prescribed and dispensed in either case, very few if any men in all probability refusing to prescribe remedies that are known to be uniformly reliable and efficacious, simply because some firm or another has the exclusive right to manufacture and sell them. This would be pedantry. When they do come *en masse* and are generally used, will not the teacher of chemistry feel that he is not educating his pupils, if the present system continues, and will not the pharmacist feel that his calling is getting a little the better of him?

To give an adequate idea of what has been done in this line of so-called "new remedies," the following list of these compounds has been compiled:

Name.	Synonyms.	Formula.
Acetanilid	Phenylacetamide	$C_6H_5NH.CO.CH_3.$
Amylene Hydrate	Dimethyl-ethyl-carbinol	 $\begin{smallmatrix}CH_3\\CH_3\end{smallmatrix}> C<\begin{smallmatrix}C\ H_5.\\OH.\end{smallmatrix}$
Anthrarobin	Desoxy-alizarin	 $C_6H_4<\begin{smallmatrix}C(OH)\\CH\end{smallmatrix}>C_6H_2(OH)_2.$
Antipyrin	Dimethyl-phenyl-pyrazolon, analgesine, phenazone, etc	 $(C_6H_5)N<\begin{array}{l}CO-CH.\\ \qquad\Vert\\ N-C.CH_3.\\(CH_3)\end{array}$
Aristol	Dithymol-diiodide	 $\begin{smallmatrix}C_3H_7\\CH_3\end{smallmatrix}<C_6H_2(OI)C-C(IO)H_2C_6<\begin{smallmatrix}C_3H_7\\CH_3.\end{smallmatrix}$
Benzanilid	Phenyl-benzamide	$C_6H_5.NH.CO.C_6H_5.$
Benzonaphtol		$C_{10}H_7O.OCC_6H_5.$
Benzosol	Benzoyl-guaiacol	$C_6H_4(OCH_3).O.CO.C_6H_5.$
Betol	Naphtalol, naphtosalol, etc	 $C_6H_4<\begin{smallmatrix}OH.\\COOC_{10}H_7.\end{smallmatrix}$
Bromoform	Tribrom-methane	$CH.Br_3.$
Bromol	Tribrom-phenol	$C_6H_2.Br_3.OH.$
Chloralamide	Chloral-formamide	$CCl_3CH.OH.CO.NH_2.$
Chloralimid		$CCl_4CH.NH.$
Chloracetone		$CH\ .CO.CH_2Cl.$
Cresol-iodide	Isobutyl-phenol iodide	Formula not given.
Cresalol	Cresol salicylate	 $C_6H_4<\begin{smallmatrix}OH.\\COOC_6H_4.CH_3.\end{smallmatrix}$
Cresotic Acid	Homo-salicylic or oxytoluic acid	 $C_6H_3\begin{smallmatrix}\diagup CH_3.\\-OH.\\\diagdown COOH.\end{smallmatrix}$
Diaphtherin	Oxy-quinaseptol	 $C_6H_4<\begin{smallmatrix}C(OH)-N.C_9H_6(OH).\\C(SO_3H)-N.C_9H_6(OH).\end{smallmatrix}$
Dithiosalicylic Acid	Di-β-thiooxybenzoic acid	 $\begin{array}{l}S.C_6H_3<\begin{smallmatrix}OH.\\COOH.\end{smallmatrix}\\ \vert\\ S.C_6H_3<\begin{smallmatrix}COOH.\\OH.\end{smallmatrix}\end{array}$
Diuretin	Sodio-theobromin salicylate	 $C_7H_7NaN_4O_2+C_6H_4<\begin{smallmatrix}OH.\\COONa.\end{smallmatrix}$
Dulcin	Para-ethoxy-phenyl-urea	 $CO<\begin{smallmatrix}NH_2.\\NH-C_6H_4.OC_2H_5\ (p).\end{smallmatrix}$
Ethyl-bromide	Monobromethane	$C_2H_5Br.$
Eugenol Acetamid		 $C_6H_3\begin{smallmatrix}\diagup C_3H_5.\\-OCH_3.\\\diagdown OCH_2.CONH_2.\end{smallmatrix}$
Euphorin	Di-isobutyl-ortho-cresol-iodide	 $\left(\begin{smallmatrix}C_4H_9\\CH_3\end{smallmatrix}>C_6H_3O\right)_2HI.$
Europhin	Phenyl-urethane	$C_6H_5NH.CO.OC\ H_5.$
Exalgine	Methyl acetanilid	$C_6H_5.N(CH_3).COCH_3.$
Gallacetophenone		$CH_3.CO.C_6H_2(OH)_3.$
Guaiacol	Methyl-pyrocatechin	 $C_6H_4<\begin{smallmatrix}OCH_3.\\OH.\end{smallmatrix}$
Hydracetine	Acetyl-phenyl-hydrazine	$C_6H_5HN.NH.COCH_3.$
Hydroxylamine Hydrochloride		$OH.NH_2.HCl.$
Hypnone	Methyl-phenyl-ketone	$CH_3.CO.C_6H_5.$
Hypnal	Compound of Antipyrin and Chloral	Formula not given.
Ichthyol	Ammonium Ichthyol-sulphonate	$C_{28}H_{36}S_3O_6(NH_4)_2.$
Iodol	Tetra-iod-pyrrol	$C_4I_4.NH.$
Iodopyrine	Mono-iodo-antipyrin	 $(C_6H_4I).N<\begin{array}{l}CO-CH.\\ \qquad\Vert\\ N(CH_3)-C(CH_3).\end{array}$
Methacetine	Para-methoxy-acetanilid	$C_6H_4.(OCH_3).NH.COCH_3.$
Methylal	Methylene-dimethyl-ether	$CH_2.(OCH_3)_2.$
Methylene Blue	Tetra-methyl-thionin-chloride	 $\begin{array}{l}\quad C_6H_3-N(CH_3)_2.\\N<\qquad\quad >S.\\ \vert\quad C_6H_3\quad N(CH_3)_2.Cl.\end{array}$
Methylene Chloride	Dichlor-methane	$CH_2.Cl\ .$
Beta-Naphtol		$C_{10}H_7(OH)$ (β.)

NAME.	SYNONYMS.	FORMULA.
Losophane	Tri-iodo-meta-cresol	 $C_6H\begin{matrix}/CH_3.\\ -OH.\\ \backslash I_3.\end{matrix}$
Orexine Hydrochloride	Phenyl-dihydro-quinazoline-hydrochloride	 $C_6H_4<\begin{matrix}CH_2.N.\\ \vert\\ N{-}{-}CH.C_6H_5HCl.\end{matrix}$
Pental	Trimethyl-ethylene	$(CH_3)_2C\,CH.CH_3.$
Phenacetine	Para-acet phenetidine or para-ethoxy-acetanilid	$C_6H_4<\begin{matrix}OC_2H_5\ (p).\\ NH.COCH_3.\end{matrix}$
Phenocoll Hydrochloride		$C_6H_4<\begin{matrix}OC_2H_5.\\ NH\ COCH_2.NH_2.HCl.\end{matrix}$
Piperazine	Di-ethylene-diamine	$C_2H_4<\begin{matrix}NH\\ NH\end{matrix}>C_2H_4.$
Saccharin	Benzoic sulphinide	$C_6H_4<\begin{matrix}CO\\ SO_2\end{matrix}>NH.$
Salipyrin	Antipyrin-salicylate	Formula not given.
Salol	Phenyl Salicylate	$C_6H_4<\begin{matrix}OH.\\ COOC_6H_5.\end{matrix}$
Sozoiodol	Di-iodo-paraphenol sulphonic acid	$C_6H_2.I_2.OH\ SO_2OH.$
Sulfaminol	Thioxy diphenylamine.	
Sulfonal	Di-ethyl-sulfon-dimethyl-methane	$\begin{matrix}CH_3\\ CH_3\end{matrix}>C<\begin{matrix}SO_2C_2H_5.\\ SO_2C_2H_5.\end{matrix}$
Sozal	Aluminium-para-phenol-sulphonate	$(C_6H_4(OH).SO_3)_6Al_2.$
Thalline	Tetra-hydro-para-quinanisol	$C_9H_{10}N.(OCH_3).$
Thiosalicylic Acid		$C_6H_4<\begin{matrix}SH.\\ COOH.\end{matrix}$
Thiosinamine		$CS<\begin{matrix}NH_2{=}C_3H_5.\\ NH_3.\end{matrix}$
Tetra-thio dichlordi-Salicylic Acid		 $\begin{array}{l}S_2{=}C_6H\begin{matrix}/Cl.\\ -OH.\\ \backslash COOH.\end{matrix}\\ \vert\\ S_2{=}C_6H\begin{matrix}/COOH.\\ -OH.\\ \backslash Cl.\end{matrix}\end{array}$
Tolypyrin	Methyl-antipyrin.	
	Methyl-antipyrin	 $C_6H_4(CH_3)N<\begin{matrix}CO{-}{-}CH\\ \Vert\\ N{-}{-}C(CH_3).\\ CH_3\end{matrix}$
Urethane	Ethyl-urethane	$CO<\begin{matrix}NH_2.\\ OC_2H_5.\end{matrix}$

Baltimore, June 3d, 1893.

THE RELATION OF SPECIFIC GRAVITY TO ATOMIC WEIGHT.*

BY A. N. DOERSCHUK.

Since the study of chemistry by beginners and amateurs is so often hampered by apparently logical theories and conclusions which seem perfectly correct to the undeveloped eye, which has not been associated with the fundamental truths and underlying principles of this acute science, and since views obtained from these theories and conclusions often cost much labor, time, and many ungrounded misgivings, we ask your most worthy attention for a few moments while we explain one of these theories which so often worry the beginner in chemistry, and for which very few if any satisfactory explanations are given.

The problem generally presents itself in this shape: "Why is the specific gravity of iron (7.84) to the specific gravity of aluminium (2.56) not proportionate to the atomic weight of iron (55.9) to the atomic weight of aluminium (27)?" Or: "Why is the specific gravity of iron to the specific gravity of aluminium not proportionate to the molecular weight of iron to the molecular weight of aluminium?" Or: "Why is it that the specific gravity of a body, in proportion to the specific gravity of water (or 1), is not the same as the proportion formed by the molecular weight of that body and the molecular weight of water (or 18)?" To get a clear idea of this matter, we must first know that the specific gravity of a body is a "purely nominal value" and is "the relative weight of equal bulks of different bodies." From observation we know that a material difference exists in the "bulk or volume" of the same weights of different bodies, while the molecular weights of these bodies are nearly the same; therefore density is as great a factor in determining the specific gravity of a body, as is the intrinsic value of the element or elements contained in that body compared to a standard of weight. Physical research has taught that molecules are never in absolute contact; in fact, the density of a substance is entirely dependent upon molecular affinity and the pressure and heat to which it is subjected. Let us take, for instance, a body the specific gravity of which is .5, specific volume 2, and its bulk twice as great as that of an equal weight of water. Now, if in the space between the molecules of this body we would place the same number of molecules of the same construction as are in the body, then its specific gravity would be increased to 1, and its specific volume reduced to 1; and if from the same body we would take one-half of the molecules, and leave the remaining half to fill the same space as was occupied by the original body, then its specific gravity would be reduced to .25 and its specific volume increased to 4. So we see that specific gravity is purely a mutable signification, entirely dependent upon the intrinsic value of matter compared to a standard of weight, and upon density which is regulated by molecular affinity, gravity, atmospheric pressure, and heat.

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* Read before the Missouri State Pharmaceutical Association.

It is clear that a proportion of the atomic weights of two different bodies could not be in ratio with the specific gravities of these bodies, because atoms of different elements unite in different numbers to form molecules, and the atomic weights of different elements are taken at different temperatures, while specific gravity is always taken at the same temperature.

The impossibility of the molecular proportion is due to the fact that molecular weight is a constant quantity, being derived with all the elements from the same basis and under *similar* conditions, while specific gravity is a variable quantity, being derived with all the elements under *different* conditions, upon the same basis; and as the same thing, differently treated, does not yield the same result, so the specific gravity and molecular or atomic weight of the same substance, differently derived, cannot be expected to be proportionate in any way.

BOTANY AND MATERIA MEDICA.

THE ORGANIC MATERIA MEDICA OF THE U. S. P. 1890.

BY G. SUTTIE, M.D., PH.C.

The Seventh Decennial Revision of the United States Pharmacopœia bears evidences of having been subjected to very careful overhauling. It is no exaggeration to say that every description of the organic materia medica appears to have been entirely rewritten, and certainly when we look at the botanical nomenclature we cannot help expressing surprise at the very great number of changes that have been made in evidence of this. There is an immense amount of labor involved in verifying botanical names and authorities, which can scarcely be realized unless one has had occasion to do it himself, and in this item of revision alone there must be represented much patient and laborious supervision.

Among the most notable changes therefore, because the most numerous, is that of the botanical names. In conformity with the resolutions adopted by all the recent congresses of representative botanists, it has been decided to adopt the first specific name given to each plant independently of the generic name. Part of this arrangement is to include in parentheses the author of the first specific name in all cases where the genus is now different from that given by the original describer. The transfer from one genus to another in this way still continues to record due credit to the botanist who first named it. This statement, however, requires qualification: some starting-point was found necessary, and it is accordingly agreed that the publication of the first edition of Linnæus' *Species Plantarum* in 1753 should be the point in question. Many of the names thus changed in accordance with this principle are very cumbersome; such, for instance, are those of Cardamom—the fruit of *Elettaria repens* (Sonnerat), Baillon; Cloves—the unexpanded flowers of *Eugenia aromatica* (Limné), O. Kuntze; Veratrine—a mixture of alkaloids obtained from the seed of *Asagræa officinalis* (Schlechtendal et Chamisso), Lindley; etc. The smallest changes we have noticed in this matter are probably those where Quillaja (Soap Bark) supersedes the former spelling of Quillaia, and where in the case of *Smilax medica*, one of the Sarsaparillas, the authorities for the name now read reversed, "Chamisso et Schlechtendal" instead of "Schlechtendal et Chamisso." There is no reason why the same transposition should not have been made in these names under Veratrine which we quoted in our previous sentence, since the two plants concerned were described in the same monograph in the same volume of Linnæa (Vol. VI) and by the same authors. Another oversight in these minor matters is where *Vitis vinifera* (pp. 447, 451) appears withont citation of authority—Linné should be attached. Still another omission is where under Male Fern (p. 59) we read that the botanical name is now *Dryopteris Filix-mas*, Schott. Since the plant was named by Linnæus *Polypodium Filix-mas* in "Species Plantarum, I.," under date of 1753, and Schott only named it in 1834, the insertion of "(Linné)" following the specific name is necessitated by the rules which the Revision Committee themselves endorse. In the case of Peppermint (p. 257) we beg to protest against appending Smith as author of *Mentha piperita*, since Smith could not by the rules now in force make use of a specific name that was already preoccupied in the same genus. It is quite immaterial to the point as to whether Linnæus described the true peppermint plant or not, no other *Mentha piperita* of any other author is permissible. Bentham, however, correctly disposes of Smith's claims in DeCandolle's "Prodromus," vol. xii, pp. 169, 170, in synonymy of ***Mentha piperita***, Lin., and ***M. aquatica***, Lin.

Some little changes are observable in the spelling of the names of the natural orders to which plants are credited. These changes have all been made in harmony with the "Genera Plantarum" of Bentham and Hooker, and we accordingly now read in this edition Scitamineæ, instead of Zingiberaceæ of the former; Berberideæ instead of Berberidaceæ; Polygaleæ instead of Polygalaceæ; Scrophularineæ instead of Scrophulariaceæ, etc., etc.

Below we give a tabulated list of all changes that have been made in the botanical nomenclature of the organic materia medica of the Seventh Decennial Revision of the United States Pharmacopœia:

ARTICLE.	BOTANICAL SOURCE.	
	1890.	1880.
Acacia	Acacia Senegal, *Willdenow*	Acacia Verek, *Guillemin and Perrottet.*
Aloe Socotrina	Aloe Perryi, *Baker*	Aloe socotrina, *Lamarck.*
Amygdala amara	Prunus Amygdalus, var. amara, *DeCandolle*	Amygdalus communis, var. amara, *Linné.*
Amygdala dulcis	Prunus Amygdalus, var. dulcis, *DeCandolle*	Amygdalus communis, var. dulcis, *Linné.*
Asafœtida	Ferula fœtida (*Bunge*), *Regel*	Ferula Narthex, *Boissier.*
Aspidium (Male-fern)	Dryopteris Filix-mas, *Schott*	Aspidium Filix-mas, *Swartz.*
	Dryopteris marginalis, *Gray*	Aspidium marginale, *Willdenow.*
Aurantii dulcis cortex	Citrus Auratium, *Linné*	Citrus Aurantium, *Risso.*
Balsamum Peruvianum	Toluifera Pereiræ (*Royle*), *Baillon*	Myroxylon Pereiræ, *Klotzsch.*
Balsamum Tolutanum	Toluifera Balsamum, *Linné*	Myroxylon toluifera, *Kunth.*
Buchu	Barosma betulina (*Thunberg*), *Bartling & Wendland* Barosma crenulata (*Linné*), *Hooker*	Barosma betulina, *Bartling.* Barosma crenulata, *Hooker.* Barosma serratifolia, *Willdenow.*
Caffeina	Thea sinensis, *Linné*	Camellia Thea, *Link.*
Calumba	Jateorhiza palmata (*Lamarck*), *Miers*	Jateorrhiza Calumba, *Miers.*
Camphorata	Cinnamomum Camphora (*Linné*), *Nees & Ebermaier*	Cinnamomum Camphora, *F. Nees & Ebermaier.*
Cardamomum	Elettaria repens (*Sonnérat*), *Baillon*	Elettaria Cardamomum, *Maton.*
Caryophyllus	Eugenia aromatica (*Linné*), *O. Kuntze*	Eugenia caryophyllata, *Thunberg.*
Castanea	Castanea dentata (*Marshall*), *Sudworth*	Castanea vesca, *Linné.*
Catechu	Acacia Catechu (*Linné fil.*), *Willdenow*	Acacia Catechu, *Willdenow.*
Caulophyllum	Caulophyllum thalictroides (*Linné*), *Michaux*	Caulophyllum thalictroides, *Michaux.*
Cetraria	Cetraria islandica (*Linné*), *Acharius*	Cetraria islandica, *Acharius.*
Chimaphila	Chimaphila umbellata (*Linné*), *Nuttall*	Chimaphila umbellata, *Nuttall.*
Chirata	Swertia Chirata, *Hamilton*	Ophelia Chirata, *Grisebach.*
Chondrus	Chondrus crispus, *Stackhouse* Gigartina mamillosa, *J. Agardh*	Chondrus crispus, *Lyngbye.* Chondrus mammilosus, *Greville.*
Cimicifuga	Cimicifuga racemosa (*Linné*), *Nuttall*	Cimicifuga racemosa, *Elliott.*
Copaiba	Copaiba Langsdorffii (*Desfontaines*), *O. Kuntze*	Copaifera Langsdorffii, *Desfontaines.*
Cubeba	Piper Cubeba, *Linné filius*	Cubeba officinalis, *Miquel.*
Cusso (Brayera, 1880)	Hagenia abyssinica (*Bruce*), *Gmelin*	Brayera anthelmintica, *Kunth.*
Cypripedium	Cypripedium pubescens, *Swartz*	Cypripedium pubescens, *Willdenow.*
Elaterinum	Ecballium Elaterium (*Linné*), *A. Richard*	Ecballium Elaterium, *A. Richard.*
Ergota	Claviceps purpurea (*Fries*), *Tulasne*	Claviceps purpurea, *Tulasne.*
Fœniculum	Fœniculum capillaceum, *Gilibert*	Fœniculum vulgare, *Gærtner.*
Galla	Quercus lusitanica, *Lamarck*	Quercus lusitanica, *Webb*, var. infectoria, *DeCandolle.*
Gelsemium	Gelsemium sempervirens (*Linné*), *Persoon*	Gelsemium sempervirens, *Aiton.*
Grindelia	Grindelia robusta, *Nuttall* Grindelia squarrosa, *Dunal*	Grindelia robusta, *Nuttall.*
Guarana	Paullinia Cupana, *Kunth*	Paullinia sorbilis, *Martius.*
Hamamelis	Hamamelis virginiana, *Linné*	Hamamelis virginica, *Linné.*
Hedeoma	Hedeoma pulegioides (*Linné*), *Persoon*	Hedeoma pulegioides, *Persoon.*
Illicium (Star-anise)	Illicium verum, *Hooker filius*	Illicium anisatum, *Loureiro.*
Ipecacuanha	Cephaëlis Ipecacuanha (*Brotero*), *A. Richard*	Cephaëlis Ipecacuanha, *A. Richard.*
Jalapa	Ipomœa Jalapa, *Nuttall*	Exogonium Purga, *Bentham.*
Kamala	Mallotus philippinensis (*Lamarck*), *Mueller Arg.*	Mallotus philippinensis, *Mueller Arg.*
Krameria (Savanilla var.)	Krameria Ixina, *Linné*	Krameria tomentosa, *St. Hilaire.*
Lappa	Arctium Lappa, *Linné*	Lappa officinalis, *Allioni.*

Article.	Botanical Source.	
	1890.	1880.
Leptandra	Veronica virginica, *Linné*	Leptandra virginica, *Nuttall.*
Matico	Piper angustifolium, *Ruiz & Pavon*	Artanthe elongata, *Miquel.*
Mentha piperita	Mentha piperita, *Smith*	Mentha piperita, *Linné.*
Myrrha	Commiphora Myrrha (*Nees*), *Engler*	Balsamodendron Myrrha, *Nees.*
Oleum Bergamotæ	Citrus Bergamia, *Risso & Poiteau*	Citrus Bergamia, var. vulgaris, *Risso & Poiteau.*
Oleum Cajuputi	Melaleuca Leucadendron, *Linné*	Melaleuca Cajuputi, *Roxburgh.*
Oleum Lavandulæ Florum	Lavandula officinalis, *Chaix*	Lavandula vera, *DeCandolle.*
Oleum Rosæ	Rosa damascena, *Mueller*	Rosa damascena, *Miller.*
Pilocarpus	Pilocarpus Selloanus, *Engler* Pilocarpus Jaborandi, *Holmes*	Pilocarpus pinnatifolius, *Lemaire.*
Pimenta	Pimenta officinalis, *Lindley*	Eugenia Pimenta, *DeCandolle.*
Pix Burgundica	Abies excelsa, *Poiret*	Abies excelsa, *DeCandolle.*
Pyrethrum	Anacyclus Pyrethrum (*Linné*), *DeCandolle*	Anacyclus Pyrethrum, *DeCandolle.*
Quassia	Picræna excelsa (*Swartz*), *Lindley*	Picræna excelsa, *Lindley.*
Quillaja	Quillaja Saponaria, *Molina*	Quillaia Saponaria, *Molina.*
Rhus Toxicodendron	Rhus radicans, *Linné.*	Rhus Toxicodendron, *Michaux.*
Santalum Rubrum	Pterocarpus santalinus, *Linné filius*	Pterocarpus santalinus, *Linné.*
Santonica	Artemisia pauciflora, *Weber*	Artemisia maritima, var. Stechmanniana, *Besser.*
Sassafras	Sassafras variifolium (*Salisbury*), *O. Kuntze*	Sassafras officinalis, *Nees.*
Scilla	Urginea maritima (*Linné*), *Baker*	Urginea Scilla, *Steinheil.*
Scoparius	Cytisus Scoparius (*Linné*), *Link*	Sarothamnus Scoparius, *Koch.*
Senna (Indian variety)	Cassia angustifolia, *Vahl*	Cassia elongata, *Lémaire-Lisancourt.*
Sinapis alba	Brassica alba (*Linné*), *Hooker filius & Thompson*	Sinapis alba, *Linné.*
Sinapis nigra	Brassica nigra (*Linné*), *Koch*	Sinapis nigra, *Linné.*
Sumbul	Ferula Sumbul (*Kauffmann*), *Hooker filius*	Ferula Sumbul, *Hooker filius.*
Taraxacum	Taraxacum officinale, *Weber*	Taraxacum Dens-leonis, *Desfontaines.*
Terebinthina	Pinus palustris, *Miller*	Pinus australis, *Michaux.*
Terebinthina Canadensis	Abies balsamea (*Linné*), *Miller*	Abies balsamea, *Marshall.*
Triticum	Agropyrum repens (*Linné*), *Beauvois*	Triticum repens, *Linné.*
Uva Ursi	Arctostaphylos Uva-ursi (*Linné*), *Sprengel*	Arctostaphylos Uva-ursi, *Sprengel.*
Veratrina	Asagrœa officinalis (*Schlechtendal & Chamisso*), *Lindley*	Asagrœa officinalis, *Lindley.*
Veratrum viride	Veratrum viride, *Solander*	Veratrum viride, *Aiton.*
Xanthoxylum	Xanthoxylum americanum, *Miller* Xanthoxylum Clava-Herculis, *Linné*	Xanthoxylum fraxineum, *Willdenow.* Xanthoxylum carolinianum, *Lambert.*

Among the desirable departures in pharmaceutical nomenclature are Coca in place of Erythroxylon, and Cusso in place of Brayera. The official starch is now directed to be obtained from Indian corn instead of wheat. There is one source less of Buchu now admissible, but as that struck off was practically not found on the market, its absence is of no great consequence. A more important change is the admission under Grindelia of another species of the genus that was being listed separately by the manufacturing houses of the country—we refer to *G. squarrosa*, Dunal. Similarly another alternative source of Sarsaparilla is admitted—there being now three available instead of the two of the previous edition. The limitation of source of Chenopodium to the variety has been removed, and now both the species and variety are classed under the common name.

Among the articles deleted from the 1890 edition are Malt and Malt Extract. We cannot understand this action unless it be on the ground that pharmacists are considered to be unable as a class to make a satisfactory test of the diastatic activity of the extract, or that the present manufacturers of the article are to be relied upon for maintaining their own standard of product without official censorship.

Among the articles admitted no one will grudge the honor to Eriodictyon (Yerba Santa) and Rhamnus Purshiana (Cascara Sagrada). Corn-silk has also received official recognition. We think that Jamaica Dogwood might very well have gone in too, but we presume that is reserved for the 1900 revision.

There is another matter left for the consideration of the Eighth Decennial Revision Committee which we would have liked to have seen incorporated in the edition before us, and that is the insertion of such therapeutic information as the British Pharmacopœia gives with regard to dose. True, it is but homœopathic in quantity, but it is very useful for various occasions of reference, and if nothing more it would have its teaching value in familiarizing apprentices, assistants and even druggists themselves with what has been called the safety-valve of the medical profession. A knowledge of dose is admittedly a valuable possession on the part of anyone to whom is permitted access to the dispensing counter, and the more frequently doses are placed before his eyes—even although it may be on occasions of preparing pharmaceutical preparations—the more indelibly are they likely to be fixed in his memory and the more readily available in an emergency.

Each copy of the new edition bears a serial number—the series being evidently subdivided into group numbers by letters of the alphabet. Series group "A" contained quite a number of typographical errata which we observe have all been corrected in series group "B." The omissions and errata we have specially indicated in botanical authorities are, however, yet unnoticed. A very grave error in group "A" appeared in the table on p. lviii which makes comparison of the strength of the more important pharmacopœial preparations in the new and in the preceding edition: we refer to where it is stated that infusions and decoctions will now be "about 1 in 5." Reference to the body of the book would have revealed the mistake and that it was 5 per cent. that was intended, or 1 in 20. Many of the medical journals—our usually reliable contemporary the *Therapeutic Gazette* among the number—have spread the statement abroad in their reviews that all infusions and decoctions are now supposed to be 1-in-5 strength, and the probability is that there will be considerable confusion in this respect for some time, as not one-quarter probably of the entire number of physicians provide themselves with copies of the Pharmacopœia, and they will depend upon what their respective medical journals have said.

A NEW GALACTAGOGUE.

BY O. A. FARWELL.

About a year ago I was very much interested in reading of the merits of the European plant *Galega officinalis*, Lin., when used as a galactagogue. As probably there is not "a greater desideratum than a thoroughly efficient and reliable galactagogue" * at the present time, it was thought that cultural experiments of the plant in question might prove serviceable to those in the drug trade who desired to prepare themselves to meet demand for it in the event of its securing the endorsement of the medical profession. The matter was accordingly placed in the hands of a gentleman whom I knew to be equally interested in making the experiments. Seed was obtained from Germany and planted in the open about the middle of last May—the seed just then arriving. The plants grew very well, making good growth with almost no attention, but they have not flowered. This was no doubt owing to the late planting, but the point of interest lies in the fact that the experiment proves that we can grow our own supplies if demand should develop.

Jerubebin.

W. K. makes inquiry regarding jerubebin in the following formula:

	Grains.
Exthroxylon	30
Jerubebin	30
Helonias dioica	30
Gelsemin	8
Extract ignatia amara (alc.)	2
Extract leptandra	40
Glycerin	q. s.

Mix, and make into sixty pills. Take one pill at 3 P.M. and another on going to bed. In some cases it will be necessary to take two pills at bedtime.

This prescription is one advertised in certain classes of papers by a patent-medicine house as a cure for "lost manhood." It is claimed that "the recuperative powers of this restorative are truly astonishing, and its use continued for a short time changes the languid, debilitated, nerveless condition to one of life and vigor." If the prescription cannot be filled by your druggist, the advertisers philanthropically offer to send the sixty pills for $1, or six boxes for $5.

The dodge is an old one, and has been exposed several times by pharmaceutical journals. Druggists, of course, are unable to fill the prescription because of the jerubebin.

We can scarcely believe that this is a misnomer for jurubebin, a poisonous alkaloid discovered in 1877 by Dr. Francis Green in the berries of a Brazilian plant, *Solanum paniculatum* (jurubeba). Jurubebin is described as an amorphous mass, of bitter taste and slightly aromatic odor. It is slightly soluble in water, and easily so in ammonia water, alcohol, and chloroform.

To our knowledge the therapeutic value of jurubebin has not been determined.

Whenever the above prescription is presented, the only thing to do is to give the customer an explanation of the fake, and dissuade him if possible from further attempt to obtain it.

Artificial Camphor.

According to the London *Lancet*, a French chemist—M. de Mare—has devised a method of preparing camphor artificially. Camphene ($C_{10}H_{18}$) is prepared by distilling very dry hydrochlorate of terebinthine; the product is collected in a large globe and heated, ozonized air being then introduced so as to mingle with the vapor formed. This results in a cloud of camphor ($C_{10}H_{18}O$), which becomes deposited on the internal surface of the globe. It is expected that the method will prove a great commercial success.

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* Dr. H. H. Rusby, in BULLETIN OF PHARMACY, 1891, p. 213.

Solubility of Cream of Tartar in Alcohol.

M. G. M.—The United States Pharmacopœia states potassium bitartrate to be very sparingly soluble in alcohol. The following figures for the solubility of potassium bitartrate in alcohol of various strengths were published by Wenzer (*American Chemical Journal*):

0.15	parts	potassium	bitartrate in	1000	parts	90	-per-cent.	alcohol.
0.19	"	"	"	"	"	80	"	"
0.30	"	"	"	"	"	70	"	"
0.41	"	"	"	"	"	60	"	"
0.79	"	"	"	"	"	50	"	"
1.32	"	"	"	"	"	40	"	"
1.96	"	"	"	"	"	30	"	"
3.01	"	"	"	"	"	20	"	"
4.51	"	"	"	"	"	10	"	"

Bismuth-Phenol.

S. M. J.—The process, as patented in England, for making this article is as follows: A solution of 38 parts of phenol in 400 parts of water and 16 parts of sodium hydrate, is thoroughly mixed with 49 parts of bismuth subnitrate. The precipitated compound is boiled with water, washed, and dried. It is a grayish-white powder containing about 80 per cent. BiO_2.

Poisoning by Tartrated Solution of Corrosive Sublimate.

Owing to the fact that tartaric acid in combination with corrosive sublimate has been extensively introduced of late as an antiseptic, pharmacists may be called upon to treat cases of poisoning by this combination. The acid is added for the purpose of preventing the formation of insoluble albuminate of mercury, when brought in contact with wounds. Dr E. Q. Thornton recently pointed out (*Therapeutic Gazette*, June, 1893) that egg albumen will not alone answer as an antidote for poisoning by tartrated corrosive sublimate.

Dr. Thornton states that an alkali must first be administered to neutralize the acid, and the reaction between the albumen and corrosive sublimate can then take place. This point may on some occasion prove to be useful knowledge, and pharmacists would do well to bear it in mind.

In all cases of poisoning, a reputable physician should be immediately summoned, but previous to his arrival valuable time can be saved by the administration of customary antidotes.

Peroxide Sodium.

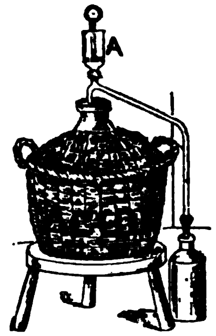
J. O. M.—We have not been able to find a published statement regarding the process for the manufacture of peroxide of sodium, which is at present manufactured under a German patent.

The substance is described as being of a yellowish-white color, partially powdered, very hygroscopic, and dissolves in water with an increase of temperature and the liberation of oxygen.

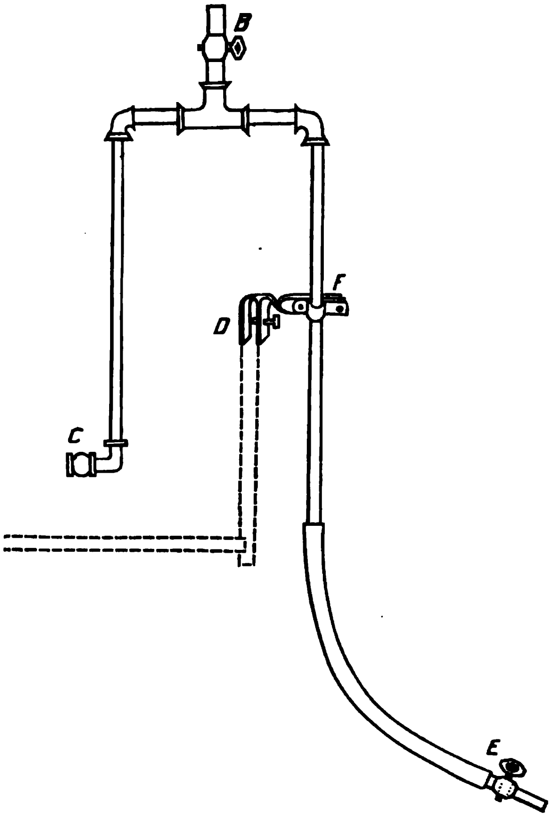
Peroxide sodium contains about 20 per cent. oxygen available for bleaching purposes. It is decomposed by dilute acids, and hydrogen peroxide can in this way be prepared.

Practical Siphon.

P. H., Arkansas.—The accompanying sketch illustrates a convenient form of siphon which is patented in England, and which would be extremely useful in decanting liquids.



Aside from the piston *A*, the siphon does not differ materially from one delineated a few years ago in the Bulletin, which we reprint for your benefit:



The siphon as presented is made from iron gas- or water-pipe, fitted with common valves (*B E*) and an ordinary check-valve (*C*).

When required for use, close the lower valve *E* (*C* closes automatically), fill the siphon, through a funnel placed in upper valve *B*, with water or the liquid to be decanted, remove the funnel, close the valve, fasten siphon to the side of the vat or container by means of clamp D, and adjust pipes by set-screw F, finally opening the lower valve E, when the liquid will flow through the siphon in a steady, easily regulated stream.

If the siphon be filled with water, this can be measured and an equal quantity drawn off to prevent admixture.

The new feature in this siphon lies in the application of the check-valve, which, even when immersed, automatically serves to prevent the flow of liquid from reversing.

Boiled Water in an Envelope.

With their customary disregard for proof of the truthfulness of their statements, a certain class of newspapers are circulating the following paragraph:

"My wife and I," says a traveling man, "were once in a hotel where we couldn't get any boiling water. After we had discussed the situation my wife asked me if I had an envelope in my satchel. I got one out, when she told me to fill it with water and hold it over the gas jet. I hesitated but finally did it, and expected to see the envelope blaze up every moment. But it didn't blaze. The envelope took on a little soot, but that was all. The water boiled in time, and the envelope was as good as ever when the experiment was at an end. I don't know the chemistry of the process, but try it yourself and see if it will not work."

A trial of a large number of different style envelopes failed to reveal one that would hold water, and those that were held in the flame caught fire on the edge. Water, however, was made to boil in heavy paper folded in the shape of a box, with wire gauze placed between it and the flame. The case simply illustrates how quickly a newspaper will seize upon a statement, especially of a scientific nature, and publish it without first proving its authenticity.

E. J. W. (Ore.).—We identify the plant you send us as *Ledum glandulosum*, Nutt. There is no preparation of this upon the market, so far as we are aware; neither are we able to find that it is recorded in works on economic botany.

E. D. D. (Fla.).—The plant we receive from this correspondent, with information that it is a "positive cure for rattlesnake or any snake bite," we identify as *Hieracium Gronovii*, Lin. We can offer no encouragement as to making a preparation of the article for the use of which you speak, as it is the experience of all who have made such remedies that they are entirely worthless; the inference is that the act of drying such plants is detrimental to the property which antagonizes the venom of the snake. Possibly the American rattlesnake is not so poisonous as it has the reputation of being; or, on the other hand, judging from the number of snake-bite remedies which have come to our attention either for identification or in some other way, some very common constituent of plant growth may be the remedial agent—such, for instance, as chlorophyll, the green coloring-matter, or something else equally common. Probably there is a field for investigation here which might yield some renown.

C. H. D. (R. I.).—This correspondent asks us what Calcatrippa flowers are. The term Calcatrippa is used on the Continent to designate the seeds of the plant which we commonly know as Larkspur (*Delphinum Consolida*, Lin.). Probably the term would be applied to the flowers as well, although of this we have no knowledge.

W. O. J. (Miss.).—The plant we receive from this correspondent is *Pluchea camphorata*, DC. It is not utilized medicinally by manufacturing pharmacists—that is, there is no fluid extract of it upon the market—but we understand that it is used in domestic practice in the Southern States, according to "Carter's Synopsis of the Medical Botany of the United States," as a stimulant, nervine, and anti-spasmodic. We give this information for what it is worth.

C. C. M. (St. John, N.B.).—We have received a plant from our New Brunswick friend for identification which would have bothered us somewhat if he had not, at the same time, informed us that it came to him from a correspondent in Trinidad. With this as a clue we are able to identify the specimen as *Triumfetta semitriloba*, Lin., its vernacular name in its native habitat being "Cousin Mahoe." We cannot give very much respecting its medicinal properties, as they are covered by the very indefinite term "alterative." The most specific information that we can lay our hands upon is to the effect that it is a good remedy in liver complaints—which is also a somewhat indefinite statement.

C. C. F. (Miss.).—We received a complete plant from this correspondent by express, asking for identification, and more particularly as to whether it is or is not the plant which is now becoming known in medical circles as Saw Palmetto. We would say in reply that the plant is *Sabal Adansonii*, Guersent. The points of difference between this and Saw Palmetto would be very difficult to give in the limits of this reply, at least with sufficient distinctness to enable one not acquainted with botanical terms to make identification of the two plants, but probably the most obvious difference in the two consists in the fact that the fruit of the plant our friend sends us is round; the fruit, on the other hand, of the true Saw Palmetto is elipsoid, that is, it has a long and a short axis.

J. M. H. (Tex.).—*Helianthus cernua*, Benth. & Hook., is the name of a plant we receive from this correspondent. We are unable, as our correspondent asks, "to test it thoroughly so as to ascertain its medicinal properties." While regretting this, we would also say in addition that plants cannot be tested in this way for medicinal properties unless the amount submitted is somewhat more abundant than our correspondent's consignment, which does not altogether weigh much over half an ounce. When remedies are to be examined thoroughly for their physiological properties, or for chemical constituents, it is necessary to have in hand something like ten to twenty pounds of material. We say this not so much because we are anxious to receive a further quantity of the plant in question, since this department of the journal does not undertake such investigations, but merely for our friend's information should he wish to apply to other parties who may be willing to take the matter in hand.

LONDON LETTER.

Superstition in Medicine—The Venom of the Toad—Drug Collecting—Animal Alkaloids—Chloroform Poisoning —Chrysarobin in Psoriasis—Pilocarpine Injections—Ipecacuanha in Hæmatemesis.

The famous Cauldron Chant of the witches in "Macbeth" is a favorite quotation of the public speaker to illustrate the differences in modern pharmacy from the materia medica of the Middle Ages. Few find anything to commend in the ingredients or in the primitive mode of compounding. Yet in the inaugural sessional address to the Pharmaceutical Society's School at Bloomsbury Square, Dr. Lauder Brunton has dared to find a virtue in the prescriptions of mediæval superstition, and to support their claims from the most recent researches of modern pharmacology. His remarks were essentially original and full of weight, as coming from a foremost leader of modern therapeutics of the English school.

However firmly the contemporaries of Shakespeare may have believed in "the poison of the toad," the sober books of natural history have for the last forty or fifty years scouted the idea of venom in toads, and the story of the friar poisoning King John's wine with a toad is regarded as mythical. An actual instance of attempted poisoning was, however, brought to Dr. Lauder Brunton's knowledge a short while ago, in which an Italian woman sought to hasten her husband's end, who was dying of dropsy, by means of a toad in his wine. To her surprise, though explained by pharmacological research, the man recovered completely, for the skin of the toad does secrete a poison, the active principle of which, called phrynin, has a very similar action to digitalis, which is the remedy *par excellence* for dropsy dependent on heart disease. Thus it is not such an improbable suggestion that one day some enterprising firm may advertise essence of toad as an animal extract of superlative virtue for the cure of dropsy.

Nor do the exact rules laid down for the collection of herbs, which made the witches careful to collect the "root of hemlock, digg'd i' the dark," suffer being ridiculed any more than the toad's venom. Practical experience, as well as scientific investigation, has disclosed the great variation in active constituents of plants at different times and seasons. Various investigators, amongst them Farr and Wright, have recently pointed out over and over again the necessity of more complete recognition and stricter definition of the best conditions, as regards medicinal activity, for the collection of drugs. The researches of Sachs, as well as of Horace Brown, have also demonstrated the rapidity of many plant changes, the formation of starch in the green leaf in the daytime and its disappearance in the night, which must of course affect the relative proportions of the other constituents of the leaf and plant.

In Dr. Lauder Brunton's opinion a new development is forming in the alkaloidal department of chemistry, equally important to the isolation of natural substances or the study of synthetical changes, namely, the recognition of the formation of alkaloids in the bodies of animals and of men. Instances of antagonistic or united physiological action have frequently been observed in plants containing more than one alkaloid. Pilocarpine and jaborine, the two alkaloids of jaborandi, for instance, almost completely antagonize each other in their action, so that a specimen of the leaves may have little or no physiological action and yet contain abundance of alkaloid. In others, as in nux vomica, the brucine and strychnine assist each other. Alkaloids also are formed in the animal body which do not always exert their true physiological action. During the day, substances that have a similar action to morphine are formed more quickly than they are excreted, so that towards night the accumulation of these narcotic bodies induces sleep, in which state a different set of substances is produced which have a stimulant action. As the latter accumulate and the narcotic substances are excreted, the sleep becomes lighter and lighter, until at last the stimulant action gets the upper hand and the person awakes.

It is evident, therefore, that animal alkaloids are just as likely to antagonize each other as vegetable alkaloids; and not only so, but may more or less completely antagonize the action of alkaloids given as medicines. Clinical experience has long ago shown that the evening is the best time to administer a narcotic, when sleep should naturally occur. Physiological effect has been hitherto regarded far too exclusively as the result of the direct action of the drug; and that the result it produces in a living body is the reaction between the drug and the organism is frequently forgotten. That is to say, not one but two factors have to be dealt with, and just as the result may be varied by altering the remedy administered, so it may also be changed by altering the body of the recipient.

Dr. Lauder Brunton at once places a practical construction on these considerations. He considers that not the impurities in anæsthetics, especially in chloroform, are responsible for many deaths, but that the impurity in some cases actually exists is the body itself in the form of alkaloidal substances which, in combination with chloroform, tend to produce death. The theory is a plausible one, and is receiving much attention in Russia from Professor Poehl, who claims that by analyzing the urine beforehand it is possible to tell whether the administration of chloroform in any case is dangerous or not: if the quantity of alkaloidal substances precipitable from the urine is large, the administration of the anæsthetic will almost certainly be risky, whereas if the alkaloidal substances are scanty the anæsthetic can be adadministered with perfect safety. Indigestion, a disordered liver, or some other cause may lead to the accumulation of alkaloids and to fatal results on a second or third administration in cases where the anæsthetic has previously been taken by the same person with safety.

The dirty and unpleasant character of chrysarobin ointment is well known. The extent to which it stains the clothes frequently causes the patient to object to a thorough treatment with this medicament in psoriasis. Dr. Dale James finds that chrysarobin can be applied with more cleanliness by dissolving one part chrysarobin in seven parts of chloroform, and stirring about an equal quantity of soft petroleum into the mass. The preparation is applied to the psoriatic area with a brush.

The effect of prolonged injection of pilocarpine on the system is a question that is being discussed in England at the present time. An interesting instance is given by Dr. Wilkin in which the drug was employed for a considerable time without giving rise to any bad symptoms. The patient, a middle-aged female, was treated for deafness with subcutaneous injections of pilocarpine. These were given in three courses, each consisting of forty consecutive daily injections. A maximum dose of a little over half a grain was attained in the first course, and then six weeks intervened before the second series of injections was commenced, during which the maximum dose was raised to one grain, and after another interval of six weeks the third course with a maximum dose of 1¼ grains was carried out. The woman's hearing was decidedly and permanently improved, as well as her general health, and, as already stated, no signs of evil from the prolonged exhibition of the drug presented themselves.

The emetic action of ipecacuanha has hitherto been considered one of the greatest drawbacks to its use in the treatment of dysentery, and to counteract it it is generally customary to give some sedative to the stomach before administering large doses. According to Dr. Burland, who has had experience with dysentery cases in the East, this is seldom necessary, except when the exhausted condition of the patient threatens syncope as following vomiting. It is interesting to note, indeed, that Dr. Burland employs ipecacuanha against hæmatemesis. When excessive loss of blood has brought the patient to the point of death, the exhibition of drachm doses of ipecacuanha in the form of a bolus, with glycerin, immediately arrests the hæmorrhage and prevents its recurrence.

BERLIN LETTER.

The Dose of Morphia—The Preparation of Citric Acid by Fermentation—A New Source of Brucine—An Old Cocaine Reaction Revived—Antagonism in Drugs and their Antidotal Value—Cathartic Acid as a Laxative—Gymnema Silvestre.

The maximum dose of morphia that may be prescribed with safety by a physician is a question of daily interest and importance. Perhaps on no other point is there a greater divergence of opinion or of individual practice, and yet it frequently involves the reputation of both prescriber and dispenser. On this account the following professional opinion of Dr. Lewin, of Berlin, in a case of death following and apparently caused by the administration of morphia under medical directions, will be read with interest. An elderly lady suffering from cancer was, after eight weeks' sleeplessness, ordered morphia, and according to directions took a dose equivalent to 0.02 to 0.03 gramme morphia salt, which is well within the maximum dose permitted by the German Pharmacopœia. Nevertheless the patient fell into a somnolent condition, and died on the fourth day, and a legal process was commenced against the attending physician as causing death. On the circumstantial evidence Dr. Lewin decided that although the symptoms were partly those of morphia poisoning, yet the effects of the cancer, an affection of the heart, and a peculiar sensibility to morphia were also important factors in the lethal exit. But even setting aside the cancerous and cardiac affections, Dr. Lewin maintained that no professional negligence could be attributed to the attending physician as long as the maximum dose permitted by the official Pharmacopœia was not exceeded.

This evidence appears in accordance with intelligent judgment, and it is satisfactory that the accused was discharged free of blame; but Dr. Lewin did not mean to let the opportunity slip, and boldly asserted a greater freedom for the medical adviser and irresponsibility to the law. He claimed that the dosage as well as the choice of medicaments should be left entirely to the discretion of the physician, as otherwise the freedom of treatment acquired by examination is endangered. Whilst the advantages of a free hand, however, are recognized, even the most conscientious man may err, and therefore it does not appear derogatory or slavish to submit to beneficent regulations or to the criticism of competent judges.

Fermentation, or chemical changes produced by bacteriological agency, is one of the oldest methods of synthesis. By its aid alcohol and acetic acid have been prepared ever since they have been recognized as chemical individuals, and for alcohol at least it still remains the most economical mode of preparation. Of late years we have been, however, taught to expect only enemies from the microscopic world—yet friends as well as enemies may be still found therein, and though the search may prove long and tedious it will yield the most obedient servants to mankind. Wehmer has indeed made friends with a new ferment, to great advantage. With it he is able to convert sugar, not into carbonic acid and alcohol, but into carbonic acid and citric acid. With a pure cultivation of the ferment he obtained six kilos of pure citric acid, identical with that prepared from lemon fruits, from eleven kilos of grape sugar. This appears a profitable synthesis, and all the work is done for a small wage in sugar.

Arrow-poisons have also been much investigated of late in the hope of isolating some new principle of pharmacological value. *Blay-Hitam*, one of the constituents of the Ipoh arrow-poison used by the wild races of Malacca, has been the latest subject of investigation in the pharmacological institute at Leipsic. At Singapore the drug was thought to be the bark of *Strychnos Tieute;* undoubtedly it is derived from a species of Strychnos, but its microscopic and chemical investigation by H. and C. G. Santesson show that it is not identical with *S. Tieute*, *S. nux vomica*, or *S. gaulthierana*. Only one alkaloid is present in any quantity, about 1 per cent., and that alkaloid is identical with brucine.

The test for cocaine proposed by Lerch and Schärges, consisting in the formation of the dark red ferric benzoate when boiled with ferric chloride, is vitiated by the fact that ferric chloride solution itself assumes a dark color when boiled, owing to the formation of oxychloride. This objection may be avoided by first boiling the cocaine with a small quantity of hydrochloric acid, and then testing for the liberated benzoic acid with ferric chloride.

Very few medicaments are so perfect in their action that they produce the desired physiological effect without at the same time inducing some secondary change in the system, productive of unpleasant or even dangerous symptoms. In these cases, if a better drug is not obtainable to produce the primary effect, it must be sought to compensate the secondary action by the simultaneous administration of an antagonistic drug. From this point of view Dr. Schilling, in the Pharmacological Section of the Nuremberg Meeting of German Scientists, spoke upon the antagonism of drugs. As instances which he had found useful in his own practice, he mentioned that the hyperæmia of the brain and aural appendages produced by prolonged administration of salicylic preparations can be avoided by simultaneous administration of ergot, whilst conversely salicylate of soda has proved an excellent antidote for ergot poisoning. Cocaine with its contractile action on the vascular system, and amyl nitrite, bear a similar relation to each other. Finally, arguing from the recognized fact that chloroform exerts an unfavorable action on the heart, Schilling has sought to regulate the heart's action during chloroform narcosis in patients with valvular failure, fatty degeneration, myocarditis, etc., by prophylactic doses of digitalis, and with the best results.

Notwithstanding that rhubarb, cascara, and senna are the oldest and most popular purgatives, it has not yet been found possible to isolate their active principles in chemical purity. Still it has been established with some certainty that the laxative action of these drugs is due to compounds either identical or nearly related chemically. Kuhly was the first to isolate from senna leaves cathartic acid, which he considered to be the active principle. Gensz also prepared a substance, a yellow powder soluble with difficulty in cold water but easily in hot water, which he likewise called cathartic acid. Professor Dehio, of Dorpat, has tried it clinically in twenty-one cases, administering doses of 0.15 gramme to adults, 0.05 gramme to children, and has found that it did not fail in any case. The patients praised the remedy because it caused no violent pain; it had no unpleasant taste, and, triturated with sugar, was readily partaken of by children. Cathartic acid has also the advantage over infusions or decoctions of senna that much more exact doses can be given, and the more pronounced the constipation the milder and more regular appears its action; hence Professor Dehio recommends it as a valuable addition to materia medica.

The disturbance of the normal sensations of taste in diabetic persons, consisting in the spontaneous appearance of a bitter or sweet taste in the mouth, can, according to v. Oefele, be overcome by the use of *Gymnema silvestre*. This plant contains an acid, gymnemic acid, which has the property when brought upon the tongue of destroying all sensation for sweet or bitter things, as well as removing the subjective parageusis. The acid is dissolved in a little spirit, with which tea leaves are saturated and then allowed to dry. Two or three leaves are placed in the mouth as required in the course of the day.

CHICAGO LETTER.

Our city is the City of Extremes *par excellence*. The morning of one day brings us a present from one of our merchants of a million dollars for a Fair Museum; the evening of the same day witnesses the cold-blooded murder of our Mayor.

If you ask the drug trade about the results of the great Fair, the reply comes that it was a surprise all around. Great returns from soda-fountains were expected—and did not come; but from some localities, where no activity in prescription and regular drug business was expected, lively times are reported. And yet the many thousands of visitors proved to the Chicago trade that our city, with all its extremes, is still the golden mean, the sensible "Midway"—in spite of the crazy Midway Plaisance.

Of the many retailers I meet in my daily tours, I hear that they met with all sorts of customers. One fellow from the far West did not think the Hunyadi-Janos sold him for 35 cents could be genuine, because he had been paying $1.00 for the genuine stuff out West, while an Eastern "shopper" refused the identical article because he never was asked more in the East than 20 cents for the genuine. And so all along the line—the prices at retail asked in Chicago, the city of extremes, are a golden medium between the outrageously high charges of the West and the ridiculously small prices obtained in the East—and this fact alone speaks volumes for our good city.

With all the rush for business among our retailers, this city has plenty of literary druggists who are equal to the task of furnishing humorous entertainment to the rest of us. Your correspondent had a genuine treat, the other day, attending a Pharmaceutical Lime-kiln Club. The question under discussion was: "What constitutes a recognized teacher in pharmacy?" and among replies offered were the following: "A recognized teacher must be able to tell the difference between the microscope and a Krupp gun; he must know the chemical reaction of Duffy's Malt as well as of the every-day duffer, and must be able to manufacture five sentences, of which the every-day duffer can understand four without referring to Josh Billings's Dictionary of Materia Medica." These few choice samples will suffice to show that pharmacy and nonsense are not among the insuperable incompatibilities.

D. R. Dyche & Co., corner of Randolph and State, one of the best established landmarks in Chicago, have torn down their big soda-fountain, both hot and cold, and the place formerly occupied by the fountain is filled now with a neat cashier's desk—both the cash registers formerly in use having been removed to the attic. Sellers of fruit-juices and drummers for costly apparatus may draw all the misery out of this fact that they are able to.

To the Editor of the BULLETIN OF PHARMACY:

Kindly extend to the following the same courtesy as you did to the communication of the Cudahy Pharmaceutical Co., by publishing it in as conspicuous a place as their open letter to me occupied in the October issue:

AN OPEN LETTER TO THE CUDAHY PHARMACEUTICAL COMPANY.

In order to further enlighten the unsophisticated reader (as you chose to call them), I will endeavor to answer your letter to me in the October issue of the BULLETIN OF PHARMACY.

In the first place I wish to call your attention to the fact that in your letter to me you make use of certain statements purporting to come from me and being part of the epitome published. These statements used by you are not truthful statements, and I would advise you in the future to more carefully read the articles upon which you desire to make comments.

In relation to the testing of pepsin, it would seem to me that a given test that is able to convert all of the digested albumen into peptone is of more value than one which is only able to dissolve a given amount of albumen but fails to carry the digestion any further. My original report upon this subject to the Minnesota State Pharmaceutical Association fully explained the several stages of conversion, and does not leave any doubt in the mind of any one that the simple dissolving of albumen is no criterion of the real value of a pepsin; in fact it signifies nothing beyond the fact of fitting the albumen for further conversion into its subsequent product. There is certainly a good and sufficient reason why the New York Board of Health holds that the albumen should be used in one lump, and Stille and Maisch recommend the albumen in thin shavings. These gentlemen, who are and were without doubt men of science and good sound judgment, or otherwise their works would not be accepted as authority, nor reference be made to them as to the nature of their workings. Of course, as long as we simply take the digesting power of a pepsin as a standard, we of course gauge the value of the different pepsins accordingly, though this is erroneous from the real point of view, so far as the absolute value of a pepsin is concerned.

I will state, though, for your benefit, that the test which I used at first is practically the same as the one to which you are laying claim, the difference only consisting in the amount of acid used. I used 0.3 per cent., with the result stated in the epitome; but since reading your article, I have again obtained several samples of your pepsin from brother druggists of undoubted integrity. I have at present three samples of your pepsin, all of which I most carefully tested according to your process given in the BULLETIN OF PHARMACY for the month of October, 1893; but I am sorry to say that I have not been able to obtain the required amount of albumen in solution, and I seriously question the fact that anyone is able to digest 2,500 grains of hard-boiled egg albumen with one grain of the pepsin in question.

Very truly,

LAWRENCE A. HARDING, B.Sc., Ph.D.

Fergus Falls, Minn.

To the Editor of the BULLETIN OF PHARMACY:

DEAR SIR: The article published in the October number of the BULLETIN, entitled "An Abuse of Journalism," is manifestly directed at a paper issued by the firm of Frederick Stearns & Co. While in the main the strictures, though severe, are well-merited, I desire to make clear the injustice of one statement, and feel confident you will not be slow to make the proper correction. It is not quite a fact that "Frederick Stearns & Co. never originated a thing," for they were very closely connected with the sale of a certain pharmaceutical termed Sweet Quinine years ago, and if my memory serves me, Mr. Stearns, Sr., was so tenacious of his glory as the originator of this article that he found the atmosphere of the American Pharmaceutical Association uncongenial.

Thinking you may desire to correct the little inaccuracy, I beg leave to remain,

Yours most truly,

SUBSCRIBER.

To the Editor of the BULLETIN OF PHARMACY:

You will, I trust, permit me to take this means of protesting against a very vicious proposal which is now going the rounds of the pharmaceutical press, and which should be silenced once for all. I refer to the idea of paying the drug clerk a commission on his sales.

The sequel cannot fail to prove utterly demoralizing to the clerk and, assuredly, unprofitable to the employer. Suppose, now, we accord a commission on certain articles for the purpose of encouraging sales. What will follow? The clerk, with an eye to his own income, will devote himself to the articles yielding a commission, and will naturally slight his other duties—duties which may be of more importance to his employer and to the general interests of the pharmacy. Moreover, unless the clerk is a very saintly specimen of humanity, he cannot fail to get into the habit of expecting extra compensation for everything he does, and ere long he will be coveting, if not asking, a commission every time he wraps a bottle or sells a lozenge. What was first an inducement and an encouragement soon becomes one of his "rights," and its scope will be stretched beyond all rhyme or reason. The druggist will be imposed upon, and the clerk will be demoralized.

When a clerk is engaged, he is expected with reason to perform, not a fraction of his duty, but his whole duty. Why then place a premium on the fraction? Why encourage a mercenary spirit which is only too apt to grow until it even demands a bonus for breathing?

Nor do I favor injustice to the assistant. If the latter proves unusually competent, and successful as a salesman, he must be rewarded, or he will seek pastures new and an employer more appreciative of talent. But the reward should come in the form of increase in his salary or of a regular donation—not in the guise of a vicious commission. I may be presumed to know: I have tried both, and can speak with a conviction begotten by experience.

EMPLOYER.

Omaha, Nov. 10, 1893.

BOOK REVIEWS

The Religions of the World: The World's Religions Clearly Defined by their Greatest Living Exponents. The Latin Historical Society, Chicago.

Amongst the World's Fair congresses which have been held in the Chicago Art Building during the past six months, not one, perhaps, is more remarkable than the Parliament of Religions, at which there were representatives of almost every belief existing in the world, men chosen on account of their learning and eloquence to describe the religious views of which they were the exponents.

The brochure, The Religions of the World, published at 25 cents per copy, gives an account of this Parliament of Religions—interesting papers written by men who have made life studies of the subject, and leaving nothing to be added to convey an intelligent and comprehensive notion of the systems which they unfold. Christianity and Judaism are too well understood to require comment, and so the space in the small pamphlet is devoted to a brief outline of various other religions. The religious system of Zoroaster is ably set forth in a paper prepared by Jinanji Jamshodji Modi, while Swami Dvivakananda describes Hindooism as a religion. A prize essay explanatory of Confucianism, by Kung Hsien Ho, of Shanghai, translated by Rev. Timothy Richard, of the English Baptist Mission, China, is also given; and Buddha and Buddhism are explained in a paper on Buddha, written by Right Rev. Zitsuza Ashitsu, of Japan, and read by Dr. Barrow. The concluding article is a speech by Mohammed Alexander Webb, a convert to Islam.

To anyone who stops for a moment in the busy life of this nineteenth century to think what he is, why he is, and what is going to be the end of this life, this book will be most interesting.

Popular Science Monthly.

In the *Popular Science Monthly* for November we are confronted with the difficulty of adequately doing justice to its contents within the limits of space at our command.

The lover of the luscious bivalve will find much instructive information in "The Conservation of Our Oyster Supply," whilst the first of two articles by Prof. Thomas H. Huxley, F.R.S., on Evolution and Ethics, written in his popular and lucid style, will interest "all sorts and conditions of men." Laplace's "Plan for

Perpetual Moonlight" does not appear to us to deserve even the few pages devoted to it, but we are more than repaid for our perusal of the latter by "Electricity at the World's Fair," copiously illustrated. A short paper on the "Pestalozzian System of Teaching," followed by a longer article on the "Scientific Method of Children," will doubtless afford food for reflection to all engaged in the generally pleasant but oft wearisome task of teaching others. The most refreshing paper of the nineteen which constitute the number is, we think you will agree with us, "Nature at Sea," in which the writer, who is evidently a close observer, and we are assured a kind-hearted man (else would he not write so tenderly of land-birds and their anxiety and helplessness when accidentally blown out to sea), gives us graphic pictures of the various interesting sights which "a good traveler and genuine lover of Nature" does not fail to see.

Joseph V. Witherbee's arguments in favor of vertical handwriting seem to us, after a careful study of his paper, almost unanswerable. With Lady Walb Paget, in her able but, we fear, ineffectual attempt to prove the advantages to be gained by a strictly vegetable diet, we sympathize. She is enthusiastic upon the subject, and almost makes us forget those appetizing cuts from a huge sirloin of beef, or a slice from a richly browned shoulder of Southdown mutton.

The Origin of the Mississippi Valley Rainfall, Mathematical Curiosities of the Sixteenth Century, Birds' Judgment of Men, and a Sketch of John Ericsson, complete this November "*embarras de richesses.*"

The Pharmacology of the Newer Materia Medica: The Botany, Chemistry, Pharmacy, and Therapeutics of New Remedies. Price, postpaid, in cloth, $3; in sheep, $3.50. Geo. S. Davis, Medical Publisher, Detroit, Mich.

During the past twelve years a mass of valuable pharmaceutical and therapeutical knowledge concerning the newer materia medica has been accumulated through many and varied sources of botanical and pharmaceutical information, particularly from reports of scientific botanists traveling in the habitats of many of the more important newer drugs. Such information is embodied in the Pharmacology of the Newer Materia Medica, a book of 1,307 pages. In a word, this work contains the most valuable data extant upon the subject of the newer drugs and their preparations, and will prove a most valuable addition to any pharmaceutical library.

Peterson's.

Amongst the readable articles in the new *Peterson Magazine* for October "The Land of the Dawning" will be interesting to anyone who has the intention of making Queensland his future home. Little attention has hitherto been bestowed upon this tropical division of Australia—Victoria and New South Wales having come in for the largest share of public interest. Now, however, the advantages of Queensland are being recognized, and the paper in question is both entertaining and instructive.

"The Ring of Gyges," a short story of an old Professor's simplicity and Cupid's strategy, may supply a hint to some Romeo or Juliet who is despondent of ever securing papa's consent. "Alma Lovell" is somewhat far-fetched and vague in its meaning, but has an excellent moral. "An Unbalanced Account" is a tale of blackest ingratitude, the counterpart of which we sincerely hope has never occurred, and never will occur, in natural life. We trust the author has had no foundation of fact upon which to build. "Adah Van Aylstine's Portrait," "The Broth of the Black Kettle," "Daughters of the Revolution," "A Mysterious Horse-Thief," and "When I Was a Man" complete an interesting number.

Outlines of Practical Hygiene, Adapted to American Conditions. By C. Gilman Currier, M.D., Visiting Physician to the New York City Hospitals; Fellow of the New York Academy of Medicine; Member of the New York Pathological Society; Member of the American Medical Association, etc., etc. E. B. Treat, 5 Cooper Union, New York.

It affords us pleasure to speak our approval of this attractive and useful volume, which has recently come under our notice. In its pages the science of hygiene has been comprehensively and concisely covered in all its phases, and the author has succeeded in presenting in a very readable form the results of extensive and careful study, observation, and experiment. His methods are highly progressive, and especially does the practical tone of his work commend it to the reader, who will find fully borne out the statement made in the preface, that "this book is designed to elucidate the truths of science, and not to mask them."

Particularly should commendatory mention be made of the chapters upon Personal Hygiene, Physical Exercise, and the Value of Prevention of Disease in the Care of Children, while the instructive value of the remaining portions as well will render it an important aid in the pursuits of the student, the pharmacist, and the practitioner, for whose convenience the work is especially designed.

Schimmel's Bericht, October, 1893.

Schimmel's "Bericht" has ever been a welcome pamphlet for the pharmaceutical chemist. This little volume of 109 pages surpasses all previous ones in usefulness; it gives literary references on novelties and a tabular statement of the percentage yield of 221 ethereal oils, their specific gravity, and special remarks on each, which will be of immense value coming from a manufacturing house with such an extensive experience in their branch as Schimmel & Co.

Lexicon Synonymorum Pharmaceuticorum in linguis latina, germanica, gallica, anglica, polonica et rossica in quo de 7000 medicamentis is res agitur. Collegerunt Ladislaus Wiorogorski, Pharmacopola, Redactor "Wiadomosci farmaceutycznych," Varsovia; et Guilielmus Zajaczkowski, Pharmacopola, Strzyzovia. Warsaw: J. Filipowicz. Parts I-VII.

The work as above indicated in the title is a polyglot lexicon of pharmaceutical synonyms in Latin, German, French, English, Polish, and Russian. The articles are very voluminously treated with regard to their vernacular names in the spoken languages; not only are crude materials of both the vegetable and mineral materia medica noted in the Lexicon, but also the products yielded by them and the pharmaceutical preparations made from them, such as oils, tinctures, ointments, etc. There is also to be found mention of all the newer synthetic chemicals, such as phenacetin, aristol, etc.

The formula is given of every chemical, and the botanical name of every organic drug, so that every means is afforded for tracing synonymy with exactness. We confess to an entire ignorance of the synonyms given in the Polish and Russian, but wherever we have tested the accuracy of the others with standard works in the different languages we have found them to be very correctly collated. The work when complete will be invaluable in drug stores which have a miscellaneous clientèle that asks for goods in every known and—to the proprietor—unknown language. The parts before us represent a vast amount of labor which we think has been carefully and faithfully done.

Australian Characeæ: Described and Figured by Otto Nordstedt. Part I. R. Friedländer & Sohn, Berlin, N. W., Carlstrasse 11. Price, 7 shillings.

We are indebted to the kindness of the Baron Ferd. von Mueller, the accomplished Government Botanist for Victoria, for the first part of what promises to be a very complete monograph on the Characeæ of the island continent. There are ten full-page lithograph plates in the part before us, six of which are illustrative of the genus *Nitella* and four of the genus *Chara;* five of the plates describe new species. We are pleased to note that the author of the monograph endorses the "Characeæ of America," by T. F. Allen, Part I (New York, 1888), as the best introduction, in English, to the anatomy, morphology, and classification of the order.

Macleay Memorial Volume. Tenth and Eleventh Numbers.

No. 10 furnishes a brief, terse description of a new species of *Acacia.* No. 11 describes *Hakea.* Baron von Mueller appears as author of the former; the latter is the joint work of the Baron and of J. H. Maiden. The elaborate plates illustrating this fine work are particularly good.

Handwörterbuch der Pharmacie, by Brestowski. Parts 11 and 12.

A SAD-HEARTED LAY.

O turkey with cranberry jelly!
O doughnuts and pudding and pie!
Ye come at the merry Thanksgiving
To such a dyspeptic as I,
With bitter-sweet mixed with your savors,
Your too tempting odors and flavors.
O turkey with cranberry jelly!
O doughnuts and pudding and pie!

—*Family Magazine.*

HE OUGHT TO HAVE WAITED.

Mrs. Doolan: Shure thin, Mrs. Dunn, your husban' must have died very sudden?

Mrs. Dunn: Indade he did, ma'am, and what makes me fale the worsht is to think that the poor mon died widout the help of a docthor.—*King's Jester.*

"What a pretty dimple that boy has," said a lady while visiting a doctor's family, as she patted the hopeful on the head. To which the infant replied: "You think that is a pretty dimple? Well, you dess ought to see the one on my stommick."—*Ex.*

Sunday-School Teacher: Now, Tommy, describe the combat that took place between David and Goliah.

Tommy (full of enthusiasm at a fight): Goliar, he come out and talked awhile through his hat. David, he chinned him a little, an' then he upped and pegged him in the cokernut with a brick, and Goliar croaked.—*American Analyst.*

BUT HE CAN'T ADVERTISE.

A physician sits in his office chair,
And there broods on his face a look of care
While he groans and wails and tears at his hair.

"Alas! and alas! and alack!" he cries;
"Surely fortune and fame would both arise
If Old Ethics would let me advertise."

At last a bright thought comes into his brain;
Says he: "I must try that old racket, 'tis plain;
It worked O. K. once and I'll work it again."

He wrote half a page on "The Evils of Pork,"
And the case of a man who swallowed a cork
And a spoon and a knife, but got stuck on a fork;
Told how he cured an imprudent fellow
Who swallowed entire a gingham umbrella,
And brought it intact from the patient's patella.

The newspapers all extended their thanks;
He opened accounts at the various banks;
He'd baited with Ethics and caught all the cranks.

—*Printer's Ink.*

FEATHERED CHIPS.

"Put up a pullet, Razberry; yo' ain' antied yit."

—*The Hustler—Judge's Library.*

INSULATED.

Witherby: I was walking along the street to-day and my feet got tangled up in some electric wires—when the whole current was turned on, too.

Mrs. Witherby: Oh, how terrible! Did the shock hurt you, dear?

Witherby: I didn't feel it, my love. I had on a pair of those socks that you knitted me for my birthday.—*Judge.*

Boggs (to Foggs, who has been talking steadily for ten minutes): Say, old man, if you're looking for a job, why don't you apply somewhere for an auctioneer's place?

Fogg (a little huffy at the remark): If I did, you'd be the first thing I'd knock down.—*Wrinkle.*

Sunday-School Teacher: Willie, when Peter walked on the water why did he begin to sink?

Willie: Because he began to doubt.

Sunday-School Teacher: That is right. What made Peter doubt?

Willie: I guess he was petered out.—*Chicago Tribune.*

Stranger: I notice you called your friend Professor. Is he really a Professor?

Boweryite: I should say so. Why, dat fellar swollars a sword eighteen inches long, stands on his ear and eats glass out of a church. Professor! Well, I should smile. —*Courier of Medicine.*

SLEEPLESS NIGHTS.

The Victim: I wish I had a bottle of that stuff! I can't get a wink of sleep until those fellows get their difficulties settled.

—*Puck.*

THE SHELTER OF HYPOCRISY.

(*From Judge.*)

1. Rev. Shinbones Johnson—"Breddern and sistahs, nebah 'propriet de property which is not your'n. Ef yo' see a chicken wanderin' roun' don't think yo' hav' a mortgage on it ——

2. —— fo' de Lord am a-lookin' right at yo'. Be humble an' bow down an'——

3. ——'Sh——!!!——

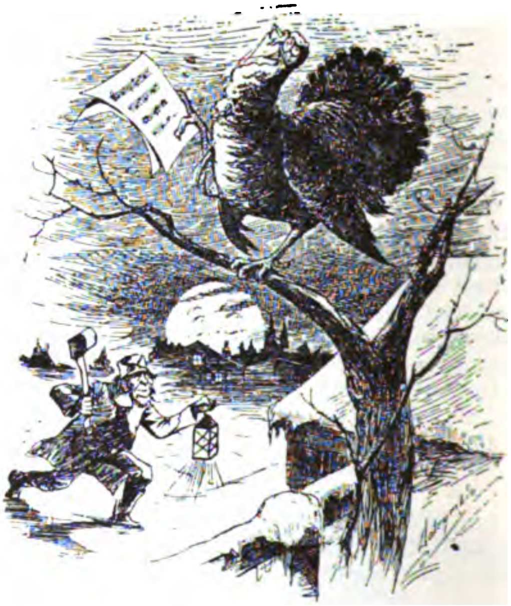
4. —— Let us pray——!!!——"

VERY PROBABLE.

Liteleigh: It was an unfortunate thing the devil tempted Eve in the form of a serpent.

Biteleigh: In what way?

Liteleigh: Well, if he had approached her in the form of a mouse, Adam would never have tasted that apple.—*Puck.*



An Old Song.

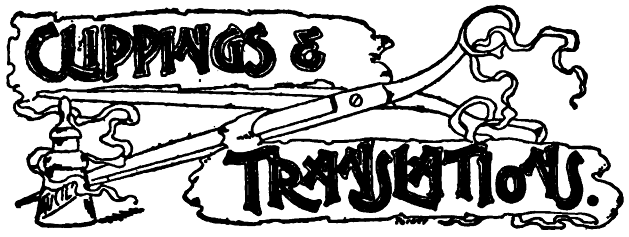
(*Time.—The night before Thanksgiving.*)

"Backward, turn backward, O Time! in your flight:
Make me a child again, just for to-night."

—*Judge's Library.*

MARKET REPORTS.

Pens and paper are stationary. Cutlery is very dull. Cheese firm and fairly active. Butter strong but inclined to be slippery. Whiskey lively and unsteady. Hops lively and active. Gunpowder inclined to be rising. Eggs opened strong.—*Exchange.*



Controlling a Trade Convention.

We have received many complaints during the past week from members of the National Wholesale Druggists' Association concerning the conduct of certain firms in trying to monopolize the recent Detroit convention, in conjunction with the managers of a certain trade paper. These concerns received considerable notoriety because of their efforts to govern the annual meeting in their own interests, as if the affair had been arranged for their special benefit. Not a few of the New York delegates were disgusted with the conspicuous assurance of the offending parties, and, according to the *Pharmaceutical Era*, some Detroit members of the trade are so indignant that they have determined not to allow a repetition of the unbusinesslike practice.

Such a convention is intended to benefit the entire trade, and all houses represented should enjoy the same privileges. The taking of any unjust advantage is deserving of an emphatic protest, as the annual gatherings would degenerate into questionable advertising schemes if the ringleaders were allowed to proceed without hindrance. It is not the time or place for competitive tactics, or for the laying of traps to catch new business. All such methods are for home use, and we can assure the trade in advance that when the convention is held in New York next year the officers of the Association will see to it that these objectionable side features are removed, and that no person or firm will be allowed to dictate the program or to incorporate their business with the convention proceedings.—*Shipping and Commercial List, and New York Price Current*, Oct. 25, 1893.

[COPY.]

October 26, 1893.

ALBERT H. STORER, ESQ.,
Publisher *Shipping and Commercial List*,
18 Liberty St., New York.

Dear Sir: As Chairman of the Committee of Arrangements and Entertainment of the last meeting of the National Wholesale Druggists' Association, I have read with a good deal of interest the principal editorial in your issue of Wednesday, October 25th.

I must take decided exceptions to the statements which you have made in this editorial, as they cast an unjust and uncalled-for reflection both on our committee and on the Association as a whole. I am in a position to know that your intimations that at the recent convention some person or firm was allowed to dictate the programme or to incorporate their business with the convention proceedings, is absolutely false, and was evidently instigated for some malicious purpose.

The entertainment features of the recent convention were entirely under the direction of our committee and a local committee appointed for the purpose. The entertainment programme consisted, first, of a President's reception and promenade concert, given at the Detroit Club, on Tuesday evening, Oct. 10th; a complimentary excursion on the Detroit River, extended by the Detroit wholesale drug trade and allied interests, on the steamer *Promise;* a yacht ride given to the ladies on private yachts furnished by Detroit citizens; a visit to the Detroit art museum; a theatre party given to the ladies; a drive through the city and Belle Isle Park; and the general banquet as a final wind-up.

Outside of the above official programme, no entertainments were given, with the exception of a reception given by Mr. F. K. Stearns, who is not a member of the Association; and a ladies' reception extended by Mr and Mrs. D. O. Haynes—Mr. Haynes, by the way, being the publisher of the *Pharmaceutical Era*, from which journal you state that you obtained your information. On the yacht rides and boat ride given by the Entertainment Committee, there were no stops made at any laboratory or place of business, nor were there any stops made on the carriage ride laid out by our committee.

The business meetings of the Association were more largely attended than those at any previous meeting for many years. Formerly, fifteen members in attendance at a meeting constituted a quorum. At the last annual meeting this rule was changed, making the number necessary for a quorum forty. At the Detroit meeting we had from seventy-five to 150 members in attendance at every business meeting, while in former meetings it has been very difficult in many cases to obtain a quorum of even fifteen. This does not look as though the person or firm referred to were allowed to incorporate their business with the convention proceedings.

In view of the above facts, we think it only just to our committee and to the many business houses in Detroit, that you either withdraw your intimations that certain firms tried to monopolize the recent Detroit Convention, in conjunction with the managers of a certain trade paper, or else take the manly and straightforward course and name the people to whom you refer. In the event of your doing this and making tangible statements, I am sure that I can refute every criticism as to the features of the Detroit entertainment. I do not believe that you will find a single wholesale druggist who was in attendance at the Detroit meeting, who will endorse the statements made by you in your editorial.

Very truly yours,

A. S. BROOKS.

"Controlling a Trade Convention."

In the issue of the *Shipping and Commercial List* of Oct. 25th, appeared an editorial under the above caption, which was one of the most flagrant and unjustifiable attacks upon "certain firms" and "the managers of a certain trade paper," as well as insulting reflection on every member in attendance at the recent meeting of the National Wholesale Druggists' Association at Detroit. The article received prompt and conclusive refutation at the hands of Alanson S. Brooks, chairman of the Committee of Arrangements and Entertainment, whose emphatic denial of the charges so wantonly made appeared in our issue of last week. The meetings at Detroit were attended by probably a larger number of delegates than was ever before seen at these annual gatherings, and the universal verdict of the members was that the meetings this year were among the most enjoyable and harmonious of any yet held. That the article making the wanton charges should cause surprise and indignation is stating the effect mildly, although comparatively few had read the same, as the offending paper has few readers in the drug trade and the copies received by them are usually relegated unread to the receptable for rubbish. To ascertain if there was a modicum of foundation for the charges made, reporters of this paper sought to find some one who had made complaints, but a thorough canvas of all who had attended the Convention from this city failed to discover *one* who had made complaint or who had aught to say except in commendation of the meetings, the entertainments, or of any feature connected with this year's Convention. The conclusion is therefore obvious that either the "complaints" originated in the disordered imagination of the writer or that they were instigated by some one who *did not* attend the meetings and imposed on our aged contemporary to gratify his personal spite for some fancied grievance. That the writer of the article received "many complaints" we are thoroughly satisfied is absolutely and unqualifiedly false, as is proven by the interviews published on another page, which include nearly all of the delegates from this city. The statement that "not a few of the New York delegates were disgusted with the assurance of the offending parties," is a statement entirely devoid of truth. We challenge the *Shipping List* to produce a verification of its wild statements or be regarded by the drug trade of the United States as a willful falsifier unworthy of belief.

The brazen impudence displayed by the sheet, after uttering the slanders, to pose as an adviser, and then giving the trade the assurance in advance that when the Convention is held in New York next year "these side features" will be removed, would be laughable had the paper any standing in the trade, but the old dame is simply pitiable in the decrepitude of its extreme age and senility.

In the paragraph commenting on Mr. Brooks' letter, which appears in the *Shipping List* of Nov. 1st, three days after it appeared in the *Reporter*, instead of complying with the request "that you either withdraw your intimations that certain firms tried to monopolize the recent Detroit Convention in conjunction with the managers of a certain trade paper, or else take the manly and straightforward course and name the people to whom you refer," there is merely a reiteration that the criticism "was based on complaints of members of the Association," and then states that "if the alleged unbusiness-like practices did not exist then our informants are mistaken, but they are still impressed with the idea that they did exist." We produce the evidence that there were not "many" or "not a few," and assert there was not *one* who made complaints, and show the statements made to be false. Now name your authorities for your charges or accept the other horn of the dilemma.

PHILADELPHIA, Nov. 1, 1893.

Editor Oil, Paint and Drug Reporter:

Replying to yours of the 31st ult., I had not seen the article from the *Shipping List* referred to, until your clipping came to hand. I certainly know of nothing in connection with the Detroit meeting which would justify any such complaints from the members as are here referred to, and am not myself amongst those who made complaint, as nothing whatever in connection with the entertainment that came to my notice showed any desire on the part of any particular firm to intrude their advertisements or business upon the members in any manner whatever.

Yours very truly, M. N. KLINE.

BUFFALO, N. Y., Nov. 2, 1893.

Editor Oil, Paint and Drug Reporter:

Replying to your esteemed favor of Oct. 31st, would say the article in the *Commercial and Shipping List* of Oct. 25th is, in my mind, prompted entirely through jealousy and a disposition to meddle with other people's business. I did not hear while in Detroit, or since, any word of dissatisfaction from any one, but on the other hand I did hear a great many say that they thought we had had the pleasantest meeting in our history.

A certain meddlesome individual has had a great deal to say in his paper about the conduct of the N. W. D. A., both before and since the meeting. The less attention paid to such an individual the better for all concerned.

R. V. PIERCE.

The attention of Mr. Thos. F. Main, of Tarrant & Co., was directed to the article in question, and his comments were as follows: "I was present throughout the meeting at Detroit and saw nothing that could be construed as an effort to manipulate the proceedings or to give one firm or party any advantage over another. I have heard of no dissatisfaction among the members, and from personal experience I should say that the *Shipping and Commercial List* has been misinformed as to the facts set forth in its editorial."

The following comments were made by Mr. W. P. Ritchey, of the wholesale drug firm of Bruen Brothers & Ritchey: "Having perused the remarks of the *Shipping and Commercial List* concerning the conduct of certain firms in trying to monopolize the recent Detroit meeting, I am prepared to say that from personal knowledge the article does not state facts. The meeting was eminently enjoyable, free from discord, and both the business and social features of the annual gathering were carried out to the entire satisfaction of every member. The idea that the deliberations of the convention were dictated or controlled by any firm or persons is absurd. I heard nothing of these charges until I read the article referred to. While at the convention I had ample opportunity to know what was transpiring, and I feel quite positive that no efforts were made from any direction to accomplish what the publication insinuates was done. I cannot credit the statement that some of the New York delegates were disgusted at what took place in Detroit, as none of them have so expressed themselves in my hearing. The publication of the editorial named is certainly unjustifiable and injurious in its tendency to the best interests of the Association."

Mr. C. S. Littell, on being interviewed, said: "I attended the late wholesale druggists' convention at Detroit as a member of the firm of R. W. Robinson & Son, and since my return home my attention has been directed to the editorial in the *Shipping and Commercial List*, entitled 'Controlling a Trade Convention.' I do not hesitate to say that the article in question is without foundation in fact and reflects unjustly upon the Association. The meeting was a most successful one from every standpoint, and was entirely free from interference by interested parties. Although in regular attendance at the various meetings and in communication with the delegates, I hear nothing of the practices alluded to in the *Shipping and Commercial List*, and cannot believe that they took place. I have conversed with many of the New York members who went to Detroit and have heard nobody express disapproval of the proceedings or any features of the meeting. I consider the article cited entirely uncalled for."

PORTLAND, ME., Nov. 2, 1893.

Editor Oil, Paint and Drug Reporter:

Yours of 31st inst. at hand with clipping from *Commercial and Shipping List.* I understand the article to refer to Messrs. Parke, Davis & Co., as they were very attentive to many of the visiting druggists (probably most of them were their customers). I was very *desirous* and *pleased* to look through their manufactory, and no doubt others were also, and should have been disappointed if I had not the opportunity.

JOHN W. PERKINS.

Mr. B. T. Fairchild, of Fairchild Bros. & Foster, gave expression to the following remarks: "Until to-day I had not heard of the article published last week in the *Shipping and Commercial List*, under the caption 'Controlling a Trade Convention,' and I will say unqualifiedly that the facts as I understand them do not warrant the assertions therein made. I view the publication of that editorial as extremely unwise and unfortunate. I know of no such attempt to influence or control the convention. The delegates were admirably entertained, and if any of them have grievances growing out of the meeting, I do not know what they are nor have I heard of anything of the sort. I have heard no complaints and have no knowledge of any disposition or effort to manipulate the meeting. When the convention comes to New York next year I expect to do my share in promoting the pleasure and comfort of visiting members."

BOSTON, Nov. 1, 1893.

Editor Oil, Paint and Drug Reporter:

In reply to yours of yesterday I can but express my surprise at its contents, and am equally at a loss to understand the animus of this complaint, and really believe there was very little foundation for it.

I for one can say that I was not "one of the many," and know of no one who was; but to the contrary I heard nothing but the heartiest commendation for the hospitality, generosity and freedom with which our Association was received and entertained, not only by the city but as well by the trade and manufacturers generally of Detroit.

As to the article in this connection published in the New York *Shipping List,* I believe it to be greatly exaggerated and unworthy publication.

E. WALDO CUTLER.

SYRACUSE, N. Y., Nov. 2, 1893.

Editors Oil, Paint and Drug Reporter:

It was my good fortune to be present at the meeting of the N. W. D. A. at Detroit, and I failed to see any action on the part of the Detroit houses which would justify the spasm of indignation shown by the *Shipping List.* On the contrary, I saw no disposition on the part of any Detroit house to run the convention or to monopolize the hospitalities of the occasion. The royal manner in which the ladies and gentlemen in attendance were treated by the good people of Detroit, the many courtesies extended, and the modest and unobtrusive manner in which same was done, was the talk of those present. I shall long remember the good time we had in Detroit.

C. W. SNOW.

SYRACUSE, N. Y., Nov. 1, 1893.

Editor Oil, Paint and Drug Reporter:

We are more than surprised at the article in *Shipping List* reflecting upon the action of your representatives at the convention. Certainly there must be some mistake. It is a fact that the convention *could not* have been "run" by any newspaper; not only that, but there was *no disposition* to do so by your representatives so far as I could see. I am sorry such a mistake could be made.

Yours, CHARLES HUBBARD.

ELMIRA, N. Y., Nov. 1, 1893.

Editor Oil, Paint and Drug Reporter:

I had noticed the article in the *Shipping List* and was surprised at same; being one of the New York party that attended the Detroit meeting of the N. W. D. A., I am free to say that all who had charge of this meeting worked to make it a business and successful one, and as far as I could see no firm or firms stepped in to monopolize the convention. Personally President Davis and his committee know how to care for the N. W. D. A. in good shape.

W. S. GERITY.

BOSTON, Nov. 2, 1893.

Editor Oil, Paint and Drug Reporter:

We are in receipt of your letter of October 27th, and find in the last issue of your paper a communication from Mr. Brooks of Detroit, in answer to the charges made. It seems to us to be satisfactory to every person. We have no further suggestions to offer other than to express our regret that some of the trade journals have published so much in regard to the meeting at Detroit, which appears to us unjust and uncalled for.

GILMAN BROTHERS.

In reference to the alleged attempt to control the late whole sale druggists' meeting at Detroit in the interest of certain firms, Mr. E. G. Wells, of the Charles N. Crittenton Co., says: "There is absolutely no foundation for any of the charges and insinuations contained in the article published in the *Shipping and Commercial List.* No improper conduct of any kind was indulged in either during the meeting or subsequently, so far as I am informed, and no adverse criticism was made by any delegate or other person touching irregular or objectionable methods at the meeting. The universal expression was one of pleasure at the success of both the business and social proceedings and everything connected with our trip to Detroit. I think the members of the N. W. D. A. are too intelligent and independent a class of gentlemen to allow themselves to be handled by any persons working in their individual interest, and, moreover, I saw no attempt of any nature to so run the convention. It is to be said in favor of the N. W. D. A. that its acts have always been inspired by lofty motives, and that its steadfast policy has been the elevation of the entire trade and securing the greatest good to the greatest number."

Mr. A. H. Mason, of Seabury & Johnson, expressed these views: "During the progress of the late convention of the N. W. D. A., at Detroit, there was no friction from any source, the hosts seeming to vie with each other in providing for a pleasant and profitable meeting. I conversed with a very large number of the members relative to the general proceedings, and found that there was great unanimity in pronouncing it a successful and agreeable meeting. There was entire freedom of action in the convention, and no semblance of an attempt to control or direct the Association, especially for selfish or unworthy ends, was made by anyone. I am sure that such tactics would not have been tolerated. I have read the article contained in a recent issue of the *Shipping and Commercial List,* of this city, accusing certain parties of trying to run the meeting in their own interest, and from what I have known from the facts I cannot indorse the assertions made, as they are not founded on the truth. I have not heard a single New York or other delegate express himself except in praise of the receptions and the entire proceedings connected with our visit to Detroit."

Mr. F. H. Sloam, of Dodge & Olcott, speaking of the Detroit meeting of the N. W. D. A. said: "After carefully reading the editorial published in the *Shipping and Commercial List* of October 25th, under the caption 'Controlling a Trade Convention,' I am of the opinion that there is no just basis for the assertions there made. While in attendance at the meeting I was particularly impressed with the harmony that prevailed throughout the sessions, and certainly nothing occurred that could cause me to suppose that any persons or firms were endeavoring to work schemes for private gain at the expense of the Association. The delegates from all sections of the country were loud in their praise of the hospitable entertainment provided, and, as far as my knowledge extends, no dissatisfaction of any nature arose, either at the meeting or since."

Mr. L. D. Hurtt, president of Pond's Extract Co., made the following statement: "The Detroit meeting of the N. W. D. A. was one of the pleasantest that I ever attended. I mingled constantly with the delegates both during and after the sessions, and neither saw nor heard anything that would lead me to think that the convention was influenced in any manner by any firm or persons. The proceedings were harmonious throughout, and I am free to say that nothing was said or done at Detroit, so far as I observed, that could be construed as an attempt on the part of any one to control the action of the Association. Since my return to New York, I have not heard any complaints of the manner in which the programme was carried out. On the contrary, every delegate seems to have had an agreeable time."

RICHMOND, VA., Oct. 31, 1893.

Editor Oil, Paint and Drug Reporter:

In reply to your communication of recent date would say that we were at Detroit for a very short time, and don't feel that we know enough about the subject of your inquiry to answer. We have made no complaint to *Shipping List.*

G. G. MINOR.

Mr. S. Coffin, of the firm of Ladd & Coffin, was seen by a representative of the *Reporter* and in the course of the interview said: "My experience at the Detroit meeting was exceedingly agreeable, and I am sure that if the methods alluded to in the *Shipping and Commercial List* were resorted to by any firm or persons, it did not come to my knowledge. The delegates were all gratified at the cordial greeting they everywhere received, and I know of nothing that called forth complaints from anyone in attendance."

Speaking of the matter, Mr. Herbert B. Harding, of the Humphreys Medicine Company, used the following language:

"I am glad to enter the strongest possible protest against the aspersions cast upon Detroit manufacturers, of using the late convention to serve personal ends.

'The wholesale hospitality by the people of Detroit has never, so far as I know, been excelled, and the casting of a slur on any of our late hosts seems to me inexcusable."

Mr. F E. Himrod says: "I never heard of the *Shipping List* and was never in their office. I was present at the meeting, and did not see or hear of any attempt to run it in the interest of any house or firm. So far as I could see, it was conducted very properly and pleasantly in every way."

Mr. Joseph Leeming says: "I never saw the *Shipping List,* and am not one of the many who are said to have complained at their office in regard to the Detroit meeting. The meeting referred to was not run in the interest of any house or firm, and all in all it was one of the most pleasant and satisfactory meetings of the N. W. D. A. that I ever attended."

PHILADELPHIA, Nov. 1, 1893.

Editor Oil, Paint and Drug Reporter:

Replying to yours of 31st ult., would say briefly that I was much surprised in reading the editorial in the *Commercial and Shipping List*, Oct. 25, 1893, with its strictures regarding the visit of the wholesale druggists to Detroit. As one of the visitors, I can only say that I thoroughly appreciated all the courtesies extended, which were certainly not confined to one establishment. The good general impression formed was not sacrificed by any special preference on account of greater facilities to offer hospitality.

Most respectfully yours, L. HASSELL LAPP.

Mr. H. S. Chatfield, of Rogers & Pyatt, says: "I was at the Detroit meeting and have just returned, and consequently could not have been one of the "many" who complained at the office of the *Shipping List*. I saw the article referred to, in Buffalo, and have discussed it with the trade to some extent. Personally I did not see nor hear of any effort being made by any house or any one to run the meeting in their interest. The general impression in the trade so far as I have heard is that no efforts of the kind were made, and that the meeting was an unusually pleasant one in every respect."

—*Oil, Paint and Drug Reporter.*

A Uniform Price-Scale for Prescriptions.

Can such a price-scale be established and maintained? Even a cursory view of this matter compels us to answer No. Theoretically, ideally, we wish to answer Yes.

A uniform price-scale among all druggists is, we believe, to a majority of the trade a great desideratum. But who can hope for such an outcome while there is such a want of fealty and trust among the members of the pharmaceutical craft?

Again, the public have much to say in deciding what they will pay for prescriptions. It has been said, "The public loves to be humbugged." This is only one way of stating that the public has its own opinion as to what is value. The same inclination is observed by those in the management of transportations. Some classes of freight will bear a high tariff, while other classes must be put too low, all because the shipping public prefer it so.

Some stores, some classes of custom, some localities permit a higher range of prices than others.

In some of the large stores, perhaps, the price is never disputed, while the majority of pharmacists frequently meet the customer who shops with his prescriptions. In a sense the public prefer a uniform price-scale —that is, they will pay as much for a dose of inexpensive medicine as they wish to for an expensive one, unless an explanation is attempted. They will pay ten times the rate for one dose that they wish to do for ten doses, yet they are prejudiced as well by the size of the bottle or package, number of doses, etc. Again, if the price is anyways low they think it inferior, if very high they suspect imposition.

Somewhat of strategy must be used by most pharmacists to get a just compensation for the product of their skill and time. They may justly take into consideration the number of doses, though the material may be inexpensive, and take advantage of their customer's prejudice sometimes as well as often yield from the same cause.

Judgment, tact, a just estimate of the value of his skill and time, fealty to the members of the craft, a desire to give good value, considerable sympathy for the unfortunate poor—all these assist in justly fixing the price for prescriptions.

Consideration of this matter leads us to conclude that a uniform price-scale among *all druggists* can hardly be established and maintained. Nevertheless it should be aimed at, attempted if not attained. Here we suggest that on all prescriptions, on copies returned to the customer after being filled, the price charged be marked in plain figures. Then if all other druggists who afterwards prepare it will charge the same price, something will be done to promote harmony and good feeling among the trade.

However, much may be done to procure uniformity in prices in our *own stores* by a scheme something like that which follows. The writer has found this to work well in his own store. This exhibit is only intended to suggest what may be done; every druggist, of course, may revise it to suit his own judgment as to what is value. This schedule of prices and suggestions, headed with a big N. B., should be kept within easy reach of the dispensary until its rules are familiar. If the proprietor or manager will watch the prices fixed by his assistants, and criticise and suggest why the prices should be fixed so and thus, it will be found that all hands will get the habit of quickly summing the factors that should fix the price.

Probably every druggist will call to mind how frequently is heard the remark, "Druggists' prices differ so," "Your clerk, the other man, charged me so and so," etc.

Preparations readily prepared for prescriptions should have the dispensing prices marked on the containers.

The following is a general outline of a scheme for a price-scale:

SCHEMATIC PRICE-SCALE.

POWDERS. *Simple*..	10c., 15c., 20c. one or two.	25c. to 30c. four or six.	30c. to 35c. ten or twelve.
Compound........	15c. to 20c. one or two.	25c. to 35c. four or six.	40c. to 50c. ten or twelve.
PILLS, CAPSULES......	10c. to 15c. one to three.	20c. to 25c. four to six.	35c. to 40c. ten to twelve.
MIXTURES: *Liquids*, *Internal*............	20c. to 25c. one oz.	30c. to 35c. two or three oz.	40c. to 50c. four oz.
Lotions.........	25c. two oz.	35c. to 40c. four oz.	50c. to 75c. eight oz.
Ointments.........	25c. to 30c. one oz.	35c. to 40c. two oz.	50c. to 65c. four oz.

Read carefully the following remarks:

a. These prices apply to drugs not over-expensive; when the selling price of the medicine is higher than the scale the charge should be advanced at discretion.

b. The pharmacist's time and skill must be considered (but not overcharged for).

c. Ordinary preparations kept in stock will be dispensed at regular prices if policy suggests that no higher prices should be charged.

d. The number of doses may be considered in fixing the price; frequency of dose as well. The same consideration applies to external remedies used freely or sparingly.—George Cutts, in *American Druggist and Pharmaceutical Record.*

Bleaching Sections.—E. Minchin, in *Natural Science*, describes a new method of bleaching histological sections before staining. Place the sections in a bottle of 80-per-cent. alcohol, having a layer of potassium chlorate crystals at the bottom. Then cautiously add a few drachms of concentrated hydrochloric acid, and subject the bottle to a gentle heat. The chlorine evolved is said to bleach sections in about an hour.

Improvement in Test-Tubes.—The overflowing of the contents of the test-tube during ebullition or from development of gases has ever been a source of annoyance. An improved test-tube has lately been devised by Hoare. This improvement consists in enlarging the upper fourth part of the hitherto straight cylinder into a globular shape. Thus room is made for any sudden increase in the volume of liquids, and gives ascending bubbles an opportunity to subside.

Cinnamon as an Antiseptic.—"No living germ of disease can resist the antiseptic power of essence of cinnamon for more than a few hours," is the conclusion announced by M. Chamberland as a result of prolonged research and experiment. It is said to destroy microbes as effectively, if not as rapidly, as corrosive sublimate. Even the scent of it is fatal to microbes, and M. Chamberland says a decoction of cinnamon should be taken freely by persons living in places affected by typhoid or cholera.—*Medical Age.*

Hazelnut Oil.—In the *Pharm. Zeit.* it is reported that hazelnut oil has recently been examined and appears to be quite as useful for medicinal purposes as almond oil. It possesses a mild taste, faint odor, and is of a bright yellow color. Its specific gravity is 0.9164. A firm yellowish mass is the result of elaidin test. It contains a small quantity of free fatty acids, 1 gramme neutralizing 0.0035 gramme of potash. Its saponification equivalent is 191.4, and its iodine absorption 83.2. Becomes solid at 20°, and liquid again at 4°. The fatty acids solidify at 9° and melt at 17°. They do not give the color reactions of the acids of almond oil.

A New Method of Obtaining Oxygen from the Air.—G. Kassner, in the *Chem. Zeit.*, describes a new method of obtaining oxygen from the air, by the agency of calcium plumbate, Ca_2PbO_4. This compound, in a spongy, porous condition, is exposed to the action of well washed furnace gases, and rapidly absorbs the carbon dioxide present, calcium carbonate and lead peroxide being formed. These products are then heated to redness, and oxygen is rapidly disengaged. When most of the oxygen has been liberated, carbon dioxide begins to come over, at first mixed with oxygen, but subsequently in a pure state. The mixed gases are passed over calcium plumbate, which absorbs the carbon dioxide and allows only the pure oxygen to escape. When the carbon dioxide ceases to be evolved from the retort, a current of air is driven through and reconverts the residue into calcium plumbate, which may then be used for a subsequent operation.

The Detection of Sesame Oil in Olive Oil.—The *Journal de Pharmacie* gives the following method for the detection of adulteration of olive oil with sesame oil. Prepare a solution as follows:

Pyrogallic acid................	2 grammes.
Hydrochloric acid.............	28 grammes.

Introduce 14 grammes of this solution into a test-tube. Pour in about the same quantity of the oil to be examined. Shake the tube vigorously, and allow it to stand until the oil and acid have separated into two layers. Remove the supernatant liquid by means of a pipette, and then boil the acid for five minutes. If sesame oil is present, the acid becomes purple on boiling. Olive oil will only give a yellow color. The addition of 1 per cent. of sesame oil by this method is easily detected.

Sugar of Milk.—Dr. P. Woltering, apotheker, states: I was used to dispense two kinds of sugar of milk, the common kind and the recrystallized. Both answered to the requirements of the Pharmacopœia. Some customers preferred, however, always the recrystallized kind, notwithstanding that it was considerably higher in price. They said it was sweeter, better taken; and some were of the opinion that sterilized milk sweetened with the common kind did not keep as long as with the recrystallized. Later I had the same experience in the case of my own child, which was fed with sterilized milk to which a solution of sugar of milk had been added. Usually the milk was promptly taken, but all of a sudden the baby's appetite decreased and it refused the feeding-bottle; its condition was not normal. It was found afterwards that by mistake the common kind of sugar of milk had been used instead of the recrystallizatum.

Thereupon I made the following experiment: To one quantity of milk, diluted with an equal volume of water, common sugar of milk is added—5 per cent. of the milk; in another quantity 5 per cent. recrystallized sugar of milk had been dissolved. The thus prepared milk is now sterilized. Hereupon I exposed it for five days to a temperature of 40°. After the lapse of that time the milk in which recrystallized sugar of milk was dissolved was as good as ever, while that containing the common sugar of milk was entirely spoiled.

Concluding, I would like to propose that my colleagues examine all their sugar of milk on its purity, according to the scheme outlined above.—*Ned. Tijdschr. v. Pharm. Chem. and Toxic.*, September, 1893.

Meetings of State Boards of Pharmacy.

The Wisconsin State Board of Pharmacy will hold its next meeting at Milwaukee, Jan. 17, 1894.

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The North Dakota Board of Pharmacy will hold its next meeting at Fargo, Feb. 13 and 14, 1894. The address of the Secretary, W. S. Parker, is Lisbon, N. Dak.

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At the last meeting of the South Carolina Board of Pharmacy D. D. Smith passed a satisfactory examination. The next meeting of the Examining Board will be held in Charleston, S. C., Jan. 24, 1894. The address of the Secretary, H. W. Hummel, is Charleston, S. C.

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The Tennessee Board of Pharmacy will hold its next meeting in Memphis, beginning Jan. 17, 1894. All persons wishing to come up at that meeting for examination should write to the Secretary, J. O. Burge, Nashville, Tenn., for blank applications and all other information.

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Advices from the Secretary of the Ohio Board of Pharmacy, W. R. Ogier, Columbus, Ohio, state that meetings for examinations will be held by this Board during the year 1894 as follows: Cincinnati, Tuesday, Jan. 9th; Columbus, Tuesday, March 13th, and Tuesday, May 15th; Toledo, Tuesday, July 24th; Cleveland, Tuesday, Oct. 9th. Applications must be made ont and filed with the Secretary prior to the date of meeting.

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The Georgia State Board of Pharmacy will meet in Atlanta, Nov. 27th, to examine candidates for druggist's license. This will be the last meeting at which 60 per cent. will pass the applicant, as the Board has determined to raise the standard to 65 per cent. at the first meeting in 1894. The grades will then be: Druggist, 65 per cent.; apothecary, 75 per cent.; pharmacist, 85 per cent. There will also be an effort to have the renewal fees done away with at the next meeting of the Legislature, as a large majority of the pharmacists favor granting only permanent licenses.

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WASHINGTON.—At the meeting of the Washington State Board of Pharmacy, held at Tacoma, August 15th, the following candidates were successful: M. G. Stewart, Tacoma; J. M. Adams, M.D., Tacoma; H. R. Garner, M.D, Seattle; Frank Van Dusen, Jr., Seattle. Assistants: F. McPhail Bently, Seattle; L. P. Dudley, Tacoma; N. Kent, Tacoma; Fred Costigan, Seattle; C. O. Buys, Walla Walla. By graduation: N. J. Barford, Seattle; J. E. Buckley, Spokane; C. R. Corey, Tacoma. Licentiates from other States: J. H. Lyon, Roslyn; Henry Schroder, Aberdeen; Geo. A. Brown, Seattle. The Board re-elected A. M. Stewart, of Tacoma, President, and W. H. T. Barnes, of Seattle, Secretary. The next meeting will be held at Spokane the second Monday in January, 1894.

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NEW JERSEY.—At the regular quarterly meeting of the New Jersey Board of Pharmacy, held in United States Hotel, Paterson, Thursday, Oct. 19th, the following were registered by diploma: Max Feldman, Newark, New York College of Pharmacy, '92; Joseph P. Carroll, Bayonne, New York College of Pharmacy, '93; Geo. W. Davis, Scranton, Pa., Philadelphia College of Pharmacy, '93; Andrew H. Reeves, Woodbury, Powers' College of Pharmacy, '93; David Neer, Paterson, New York College of Pharmacy, '93; Robt. A. Roe, Paterson, New York College of Pharmacy, '92; Frank A. Niblette, Jersey City, New York College of Pharmacy, '93; Jesse C. M. Makholm, Jersey City, New York College of Pharmacy, '92; Martin F. Becker, Paterson, New York College of Pharmacy, '92; Joseph C. Saile, New York City, New York College of Pharmacy, '84. A class of thirteen was present for examination, and the following passed: Elias W. Parsons, Elizabeth; Geo. S. Hoffecker, Paterson; Emil H. Giovonelli, New York City; Wm. H. Reibel, Hoboken; and E. W. Hubbard, Perth Amboy. There will be a special meeting, for business and examination, at the New Jersey College of Pharmacy, Clinton street, Newark, Thursday, Dec. 21st, 10 A.M. Albert S. Elwell, Secretary.

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MISSOURI.—At the regular quarterly meeting of the Missouri State Board of Pharmacy, held on the 9th of October in St. Louis, fifty-five applicants for registration presented themselves, of whom the following passed the examination: A. Audel, A. Althoff, W. Billerth, S. V. Bracy, J. E. Casebeer, F. Christman, J. W. Gray, W. R. Harris, E. Tritterman, Chas. Koch, F. W. Koch, Alv. H. Koch, W. Oldendorf, W. K. Penn, W. B. Pilkington, O. L. Wright, Chas. W. Stockhausen, L. C. Swinnen, of St. Louis; J. D. Ebert, of Holt; W. T. Findley, of Louisiana; J. C. Hope and J. M. Stauber, of St. Joseph; J. Piper, of Gorin; and E. A. Tresser, of Tipton, Mo. F. W. Sennewald, Secretary

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COLORADO.—At the Sept. 18th meeting of the Board of Pharmacy of Colorado, the following were granted certificates as registered pharmacists: James McCormick, Denver; Richard B. McCoy, Denver; James Nelson Kennerley, Pueblo; Milford M. Maybury, Denver; Ellsworth Frank Wallick, Pueblo; W. C. Casley, La Junta; J. T. McMurray, Denver; C. H. Howe, Denver; Edw. J. Sexton, Denver; Arthur H. Allen, Boulder; Charles W. Crouter, Greeley.

The following received certificates as assistant pharmacists: Wm. P. Swartz, Bessemer; Wm. P. Henderson, Denver; W. L. Clowes, Hugo; Thomas D. Shurtz, Denver; John Hamilton Harkins, Aspen; Ambrose A. Cullen, Leadville.

The next meeting will be held at Denver, Jan. 8, 1894. For detailed information address the Secretary, F. H. Arcularius, Colorado Springs, Colo.

VIRGINIA.—At a meeting of the Virginia Board of Pharmacy, held in Lynchburg, Oct. 23d, the following passed satisfactory examinations and were granted certificates as licentiates: R. Lundy Peutz, Danville; W. R. Suddaby, Danville; V. O. Bendall, Lynchburg; J. F. Gordan, Richmond; D. S. Carraway, Clifton Forge; D. M. Calhoun, Richmond; Paul Fleet, Lynchburg; W. A. Taylor, Blackstone; P. H. Casy, Lynchburg; E. B. Muse, Blackstone; C. R. Hunter, Richmond; H. R. Johnston, Lynchburg; James R. Collins, Bowling Green; H. I. Sullivan, Big Stone Gap.

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ILLINOIS.—At the practical examination of the Illinois State Board of Pharmacy, held in Chicago, Oct. 17–18, 1893, the following passed a satisfactory examination as licentiates in pharmacy, and were registered as registered pharmacists by examination: W. C. Amsden, W. F. Cathcart, J. H. Crapser, H. J. Duncan, F. Hunsche, E. H. Madajesky, F. H. Ruschhaupt, of Chicago; and C. R. Carson, Mahomet.

The following passed a satisfactory examination as assistant pharmacists, and were registered as assistant pharmacists by examination: B. W. Baker, W. L. Becker, R. E. Blackman, C. F. Biebeman, H. Brandon, C. P. Gowman, F. Griffith, T. A. Hohman, L. Holmgrain, J. D. King, C. A. King, E. F. Raab, J. B. Sutton, of Chicago; W. M. Davis, Dwight; and J. H. Walters, South Elgin.

Eleven failed to pass a satisfactory examination.

Next meeting of the Board for examination will be held Nov. 21, 1893, at No. 173 Thirty ninth street, Chicago. Frank Fleury, Secretary, Springfield, Illinois.

THE SOLUBILITY OF SO-CALLED INSOLUBLE SALTS.—A. F. Hollemann, prompted by vant 'Hoff, has achieved the determination of the solubility of salts soluble with difficulty—determinations which are not practicable by means of weighing—by utilizing the electrical conductibility of the solution in each case (*Zeitschr. f. Physiol. Chem.*, 1893, p. 125), and thus has reached the following results. He finds soluble:

		Parts of water.
At 8.8° C.	1 part barium carbonate	64,070
At 24.2° C.	1 " " "	45,566
At 18.9° C.	1 " " sulphate	429,700
At 37.7° C.	1 " " "	320,000
At 20.2° C.	1 " bromide of silver	1,971,650
At 38.4° C.	1 " " "	775,400
At 8.7° C.	1 " calcium carbonate	99,500
At 23.8° C.	1 " " "	80,000
At 13.6° C.	1 " " oxalate	148,220
At 24.6° C.	1 " " "	124,400
At 13.8° C.	1 " chloride of silver	715,800
At 26.5° C.	1 " " "	384,100
At 28.4° C.	1 " iodide of silver	1,074,040
At 40.4° C.	1 " " "	420,260
At 8.8° C.	1 " strontium carbonate	121,760
At 24.3° C.	1 " " "	91,468
At 16.1° C.	1 " " sulphate	10,070
At 26.1° C.	1 " " "	10,030

INJURIES FROM CARBOLIC ACID.—Warnings are given in a German medical journal against the injury to skin, and even bone, which may result from the long continued use of weak—say 3-, 2½-, or even 2-per-cent.—carbolized applications, especially upon peripheral portions of the body, such as the fingers. This effect, it is asserted, is due in a small measure to the action of carbolic acid upon the vaso-motor system, but in the main to its destructive effect upon the red and white blood-corpuscles. This induces, partly in a mechanical and partly in a chemical way, stasis, first in the capillaries, and, if the action of the drug be continued, then in the larger veins and arteries, with the result that the nutrition of the part is interfered with and the removal of harmful substances hindered; the maceration of the epidermis caused by the acid favors evaporation, so that the gangrene is a dry one, a mummification as it were. The opinion is also expressed that even weak carbolic solutions, as external applications, are to be either completely discarded or to be used only with the strictest precaution.—*American Analyst.*

CONSUMPTION IS A DISEASE DANGEROUS TO THE PUBLIC HEALTH.—The Michigan State Board of Health, on Sept. 30, 1893, adopted the following resolution:

> *Resolved*, That hereafter, consumption (and other diseases due to the *Bacillus tuberculosis*) shall be included in the official list of 'Diseases dangerous to the public health,' referred to in sections 1675 and 1676 Howell's statutes, requiring notice by householders and physicians to the local health officer, as soon as such a disease is recognized.

Speaking of the above, Dr. Henry B. Baker, Secretary of the Board, says: "In this resolution the question of isolation of the patient is not mentioned. Its purpose is to secure to the local health authorities and to the State Board of Health information of the location of each case of this most dangerous disease, with the view of placing in the hands of the patient reliable information how to avoid giving the disease to others, and in the hands of those most endangered information how to avoid contracting this disease."

A GERMAN patent has been issued for producing varnish from linseed oil by electricity. Linseed oil, which has been purified in a proper manner, is thoroughly mixed and agitated with sulphuric acid and water, and subjected for about two or three hours to the action of an electric current, so that the oxygen produced in the nascent state by the passage of the current converts the oil into varnish. According to the inventor, the varnish so produced is almost colorless and perfectly free from all mineral or metal admixtures or impurities.—*Oil, Paint and Drug Review.*

A QUICKSILVER MINE is reported discovered at Ohaeawei, Bay of Islands, New Zealand. There is an immense quantity of ore in sight, and when the spade is inserted into a block of carboniferous clay the quicksilver squirts out. The mine promises to be a most valuable property. It is said to be the first true quicksilver lode found in the southern hemisphere.—*Oil, Paint and Drug Review.*

THE OUTPUT OF GOVERNMENT QUININE IN INDIA.—Dr. George King, the botanist of Sweebpore, reports that 4,331,651 cinchona plants were grown in British Sikkim, and that the crop for 1892 was 304,390 pounds of cinchona. From this quantity 5,242 pounds of sulphate of quinine were made, as well as 3,481 pounds of cinchona febrifuge.

PUBLISHERS DEPARTMENT

ITEMS OF INTEREST.

Parke, Davis & Co.'s Price List for 1893, comprising a complete catalogue of the products of the laboratories of this firm, is a richly illustrated price-list of American pharmaceutical products, of which prominent physicians and apothecaries might well take notice because they will learn many new things therefrom. Parke, Davis & Co. seem to enjoy in America about the same high position that is held by the firm of E. Merck, of Darmstadt; at any rate, "P., D. & Co." deserve great credit for what they have done for pharmacy. Many new drugs, such as Cascara sagrada, Hydrastis canadensis, Piscidia erythrina, etc., have been introduced by them into our market. We find nothing in their catalogue referring to humbug patent medicines, which as a rule play a great rôle in America, and we state this fact with satisfaction.—Dr. Axel Winckler, in *Reich's Medicinal Anzeiger*, Oct. 27, 1893.

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PAPA AND THE PIG.

A TEARFUL TALE OF ANTI-FAT AND VORACITY.

(*Puck's Library.*)

I.

"Farewell, dear pig," the children cried; "you're going to the Fair,
Where for your size you'll take the prize, and we will see you there."

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CANADA.

Dr. N. W. Shaw has opened a new drug store in Lucan, Ont.

G. F. Johnson, druggist, of Sussex, N. B., has gone to Florida for the winter.

W. H. Clark, druggist, St. Stephen, N. B., expects to be in his new store, corner Water and Main streets, about the 1st of December next.

N. D. Norris has opened a neat new drug store at Elora, Ont. Mr. Norris is a gold medalist, pushing, energetic, and popular. His friends predict a successful future for him.

The well known druggists of Woodstock, N. B., Julius Garden, of Garden Bros., and H. Paxton Baird, in company with Dr. Sprague and several other citizens of the town, visited the White City last month.

On Nov. 3d, as Northrop & Lyman's representative was driving from Woodstock to Houlton, N. B., he was held up near New Burg by two men, who got his watch and $170. Highway robbery is not common in Carleton county, and the event caused much excitement. A posse is in search of the robbers.

Harry Browning, the 16-year-old son of Dr. Browning, of Exeter, Ont., while walking in his sleep some weeks ago fell 30 feet out of a third-story window. His skull was terribly fractured, and death seemed inevitable. He lingered on, however, and now, after lying forty-nine days unconscious, he has recovered the full use of his intelligence and is in a fair way to recovery.

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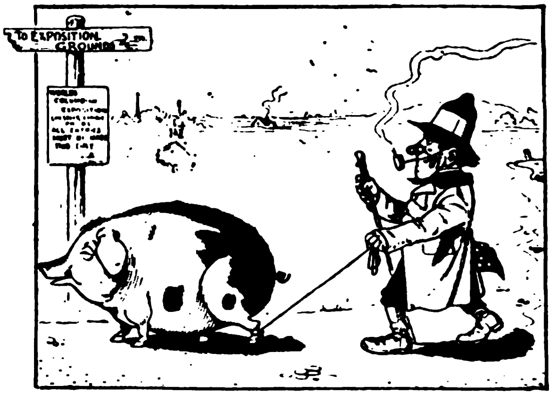

II.

Then off toward Chicago town went Papa and the pig
At gentle trot, to tire not the porker fine and big.

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CONNECTICUT.

L. D. Kellogg, of New London, has assigned to C. M. F. Rodgers.

Geo. F. Farovid, of New Haven, spent two weeks of the month of October taking in the sights at the World's Fair.

A. F. Wood's Sons, of New Haven, have been making extensive improvements in their store. It is now one of the most complete stores in New Haven.

One of the best known traveling men visiting the drug trade in Connecticut is Ed. J. Dowd. Mr. Dowd represents Chas. E. Haley & Co., of Boston, dealers in druggists' sundries.

John F. Harrison, who has been with Chas. S. Finch, of Stamford, for the past three years, passed a very satisfactory examination before the State Board of Pharmacy at its last meeting.

T. G. Bodine, of Danbury, lately placed some new signs over his door which indicate that he is doing a wholesale as well as a retail drug business. Mr. Bodine is doing a large business with the physicians in his city.

John K. Lawrence, successful druggist and business man of Stamford, was recently married, in the Second Congregational Church of Greenwich, to Miss Jessie Lee Scofield, of the latter city. Many friends from Stamford, Greenwich, and New York were present.

The Bristol Drug Co., of Ansonia, is one of the heaviest stocked drug stores in the Naugatuck Valley. The manager, L. B. Switzer, is a graduate of the Philadelphia College of Pharmacy, class of '88. The store was established in 1840 and has always enjoyed a good business.

If you want to find a busy man, call on John O. May, of Naugatuck. Mr. May is just as pleasant as he is busy. He is the oldest druggist in Naugatuck, and has a very successful business. Besides his retail business he is manufacturer and proprietor of Marshmallow Cream, which Mr. May states is having a good sale.

Waterbury:

Dexter & Co., of this place, opened Nov. 1st a branch store at Waterville, Ct., in a new building built for them. This store is managed by the genial Sam. J. Wells, who has been head clerk for Dexter & Co. during the past seven years. With such management the store can't help being a success from the start. Mr. Wells's place in the old store at Waterbury will be taken by Henry Moses, lately with Dr. E. C. Newport & Son, of Meriden. Mr. Moses comes to Dexter & Co. well recommended. We wish the new store of Dexter & Co. the success which their old store in Waterbury has attained.

One of the most pleasant men a traveling man comes in contact with is J. W. Cone, of Waterbury—always has a pleasant word for all.

C. K. Kilbride & Co. have a very nice store and are fast working into popularity with the people of Waterbury.

Dr. F. M. Cannon, of Cannon & Webster, druggists, suffered a shock some four months ago and has been confined to his house since. He is slightly improving, but recovery is doubtful.

A very pretty drug store is that of J. V. Comeau, Brooklyn street. Mr. Comeau opened this store last June and has been very successful. Ellsworth F. Scofield is head clerk, and to say he is a hustler is not half expressing it. Mr. Scofield has been in the drug business the past fifteen years, having had experience in some of the leading stores of Bridgeport and New Haven, which makes him a very competent man for Mr. Comeau.

⁂

Little Boy (with bad cold in the head): Water is runnin' out of my nose all the time.

Mamma: That's because you went out in the cold with no hat on.

Little Boy: I didn't know it was cold enough to burst my pipes.—*C. D.*

The Dios Chemical Company, of St. Louis, offer you Sennine as a substitute for iodoform, and concerning this new American antiseptic they state as follows: It is entirely free from odor; is convenient to apply in powder form or as an ointment, also as a wash. Five parts are perfectly soluble in 100 parts of water. Comparatively cheap; put up in 2-oz. tin boxes. The prominent members of the profession are using it, as they are able to obtain satisfactory results to the exclusion of obnoxious odors.

"He who would pass through the door to success will find it labeled, *Push.*"

When night comes, the literary and active business man's brain is hungry from the exhausting labor of the day. Horsford's Acid Phosphate quickly supplies the waste of tissue, and refreshing sleep results.

Charlie: What have you done about the physician's advice to take physical exercise?

Fweddy: Incweased the size of the chwysanthemum I weah. —*Chicago Record.*

The Thompson & Norris Co. show a new cut of their corrugated partition packing, with side-linings and bottom pads of cork, which is an exceedingly desirable form of this style of packing. See advertising page 4.

⁂

DRUGS & PAINTS
One Dose Warranted to Reduce Flesh
USE OUR ANTI-FAT

III.

They reach the suburbs of the town; an old friend for them waits
And while hands clasp in hearty grasp, the pig investigates.

⁂

ILLINOIS.

C. H. Dawson runs the only all-night store in Decatur.

Sheppard & Becker have the old Weaver corner at Mattoon. Success will be theirs.

Frank Tyler, of the Opera House Drug Store, Decatur, will serve hot soda this winter.

Harry Sommer, of Quincy, is the new treasurer of the Spokane Drug Co., at Spokane Falls.

Thomas Wood of Carbondale, and T. N. Rosson of Pomona, recently passed the Board of Pharmacy, getting full registration.

G. P. Crabtree is one of the "livest" druggists in Cairo. You are liable to find the newest goods in the market at "Crabby's."

I. N. Coffee, of Cairo, represents Southern Illinois on the Board of Pharmacy. Mr. Coffee has a nice business in Cairo and is a thorough gentleman.

J. O. Christie has bought the Fischer stock of drugs on Hampshire street, Quincy. The new pharmacy will be under the competent direction of Ed. Granacher.

John H. Rockaway, in the employ of A. C. Johnson, Mt. Vernon, was attacked and knocked down on his way home from the store recently. John was mistaken for another fellow.

Springfield:

Chester Bolles will put a man on the road advertising "Cherry Cough Cure."

Chas. Molz, formerly with J. H. Utley, is now with the Schuh Drug Co. at Cairo.

Robt. Clarkson, former manager of Good's pharmacy, is now with Broadwell. He takes the place of G. Shackleford, who has returned to Kansas.

Henry Schneider, of Chas. Ryan's store, is now attending the Chicago College of Pharmacy. Chas. Gräser succeeds him.

Henry Burkhart has taken Aaron Howitt's place with Chester Bolles.

Chicago:

W Reinhold, one of Chicago's oldest German pharmacists, died Nov. 12th. The firm was Moench & Reinhold. Mr. Moench died about thirteen months ago, and Mr. Reinhold retired from pharmacy and followed the practice of medicine. At the time of the big fire, Moench & Reinhold were the leading prescriptionists of the North Side, and were among the first to open a store in the burned district.

C. A. Storer, of the Virginia Pharmacy, is away on a short vacation, and reports have it that he is to bring back with him a partner, but not in the drug line.

Schroeder & Van Nice succeed Dr. E. J. Fischer in the drug business carried on under the name of the High School Pharmacy, 2250 North Ashland avenue.

J. H. Holthoefer, for several years in the drug business at 3160 State street, has sold out to Ward & Wolfe.

Dr. E. B. Featherstone, of Ravenswood, has started a branch store at North Fifty-ninth and North Clark streets, to be known as the Featherstone Drug Co.

⁂

TO CEMENT WOOD TO GLASS.

Gum some labels of paper to the glass. If properly dried, nothing but scraping or soaking will remove them. Then cement the wood to the paper, using: virgin rubber, 2 parts; resin, 1 part; gum shellac, 2 parts. Melt together and apply hot.—*Scientific American.*

A STRAIGHT TIP.—Sell your customers who complain of being run down. a few bottles of Nichols' Bark and Iron, the household tonic. Once get this tonic started, and you will have to order it by the gross from Billings, Clapp & Company, 165 High street, Boston.

A SOCIAL DILEMMA.

"I hear that Tom De Lisle is engaged to one of the Harding twins."

"Yes, he is."

"To which one?"

"He doesn't know."—*Detroit Free Press.*

DRUGS & PAINTS
One Bottle Warranted to Reduce F
USE OUR ANTI FA

IV.

At home he was a hand-fed hog, and hunger urges on.—
A crushing sound, the friend turns round, the anti-fat is gone.

⁂

INDIANA.

Fred Meissner, a "hustler" among the druggists of La Porte, is getting quite a reputation as a truss fitter.

Johnston Bros., of Logansport, report their soda-water trade this season far above the average. "John" knows how to make a good soda.

John C. Whitaker, formerly engaged in the drug business in Missouri, has purchased the drug store of the late E. W. Fobes at Elkhart, and is doing a nice business at the old stand.

⁂

V.

The fat friend, mad, goes on his way, more anti-fat to buy;
'Tis such a joke, it makes Pa choke and wink the other eye.

⁂

W. Buedingen & Sons Co., Rochester, N. Y., are making large lines of fine perfumery boxes for some of the largest perfumery houses in this country. A new thing in this line is the Crepe Tissue Box, on which their customers seem to have a very large run. In a word, their business has been increasing at such a rate that they have been compelled to build a large six-story factory, into which they will move about March next.

He: I have your mother's consent, and now——

She: It can never be, sir. I highly respect you and will be a sister to you, but——

He: Hold on; you will be a daughter to me. I'm going to marry your mother.—*Truth.*

⁂

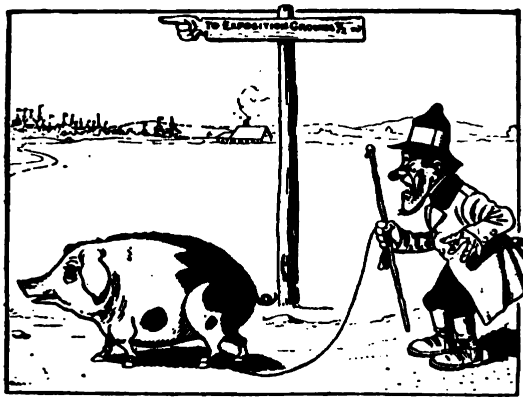
KENTUCKY.

James O. Cook, of Cook & Co., Hopkinsville, is in Louisville putting the final touches to his pharmacal knowledge.

Robert McFarland, formerly with Read & Davis, Henderson, is soon to open a drug store in the fine new brick building now in process of completion on the corner of Second and Elm streets, same city, property of Henry Claymeyer. Judging by the impression Mr. McFarland makes on first acquaintance, his corner will become a favorite with those desiring articles in his special line.

A. P. Harness, who has been occupying a corner in a growing quarter of Henderson, will soon move into a more spacious store across the street. When Mr. Harness commenced business in his present quarters, he found that besides attending behind the side counters and "filling" prescriptions something else was needed to run his store properly, and he propped the door open and met the emergency. He proposes to "run" his store himself, and does it.

⁂



VI.

But to his horror and surprise, he notes a dreadful change—
As sure as sin, that pig grows thin! Good sooth, 'tis passing strange!

⁂

J. H. Day & Co., of Cincinnati, O., report this week sales of their special machinery to Seattle, Wash., Bangor, Me., Jacksonville, Fla., and Corpus Christi, Tex. This is not exactly the four corners of the earth, but it comes very near being the four corners of the United States.

"What is the matter with Spriggins?"

"Alphabetic derangement."

"What do you mean?"

"Not enough V's and X's, and too many I. O. U.'s."—*Washington Star.*

MASSACHUSETTS.

Capt. John I. Gibson, who recently sold his business at Lowell to F. H. Martin, has again "gone on the road."

M. A. Kennedy, at New Bedford, has taken hold quite strongly of the trade in his section, and seems to feel no regret at making his venture.

Fred Lane, for some time head clerk with A. E. Price, of Gloucester, is just about to open a new and well appointed prescription pharmacy in that town.

William A. Burton, who has been a clerk for the Wright Drug Co. of New Bedford, recently purchased the store formerly occupied by W. B. Peck, on County street. Mr. Burton has made quite a number of improvements in the store, and will make "Onward and Upward" his business motto. Mr. Peck is at present out of the trade, although rumor says he will start a new store by-and-by.

Frank R. Pease, of the old "Weld Street Pharmacy," New Bedford, is to open, about Dec. 1st, a new store near his old stand, and is to have one of the finest stores in Massachusetts. He proposes to have the ℞ trade of his end of the town if high-class preparations and attention to business will draw it. Mr. Pease is also a partner in the firm of Pease & Dandurand, at the "South End," and so holds a grip on both ends of the city. "May he live long and prosper."

Henry M. Whitney, of Lawrence, President of the Board of Registration in Pharmacy, is kept very busy now by his public duties. Recent legislation has largely added to his work, and more laws for the protection of the druggist are being discussed which, if carried through, will still further increase his responsibilities. It is lucky that his shoulders are broad, or they would bend under the weight imposed upon them. Mr. Whitney is one of the best known men in the American Pharmaceutical Association, and many of us enjoyed to the full the fruits of his labors as local secretary for the 1892 meeting.

⁂

VII.

And thinner yet he grows amain till all his ribs show through;
And, see, the Fair is over there! Pa cries: "What shall I do?"

⁂

The Walker-Green Pharmaceutical Co., of Kansas City, state, concerning Elixir Six Bromides in connection with the treatment of epilepsy, as follows: The Elixir Six Bromides is known to have great power in diminishing irritability of the cerebral and spinal centres, hence is most effective in controlling epilepsy. The ammonia it contains, with its acid and stimulating qualities, increases the action of the bromides. The incorporation of the Cannabis Indica with this Elixir is a safeguard against the cumulative action in the system of the bromides, for it aids the kidneys in throwing it off. The iron and the chemically pure salts prevent skin eruptions and anæmia which so often follow the bromides when given alone.

A SONG OF THE TRACK.

A fellow who loses the first little five
That he happens to risk on a horse,
Nine times out of ten is not tempted again,
For he thinks he's unlucky, of course.
But it isn't the first little five that you lose
That tempts you to try it once more;
Though you'd like to get square, a voice cries "Beware!"—
The voice of the five gone before.

It's the first little five that *wins;*
There's where the trouble begins.
Then you'll play 'em or bust, and you'll lose all your dust
Through that first little five that wins.

—Mittens Willett, in *The Hustler.*

⁂

MICHIGAN.

G. V. Collins & Sons, of Charlotte, have launched out into the physicians' supply business, and have largely increased their already select stock of fine pharmaceuticals.

Grand Rapids:

J. C. West & Co., 8 Canal street, have enlarged their rooms on account of the increased business on their headache powders. Their store now presents a very attractive appearance, being finished in white and gold.

M. A. Jones, Ph. C., chemist for Scribner & Aldworth, is the happy father of a bouncing girl baby. We would suggest that the name of the new-comer be taken from the Bible if Mrs. Cleveland has not copyrighted the list.

Will White No. 1 has returned from the World's Fair, from which point he brought a number of souvenirs. He has once more settled down to business at the old stand, The Morton House Pharmacy.

G. T. Haan & Co. have one of the most perfectly equipped and handsome stores in Grand Rapids They are continually adding new stock and fixtures, and have just put in the new improved square shelf-bottles and a complete line of compressed and hypodermatic tablets for physicians' use.

We are advised that the Hazeltine & Perkins Drug Co. are at present doing a very large and increasing business. With the addition of two extra travelers to their force, a largely increased stock in all lines, but especially an increase of about fourfold in the pharmaceutical line, they are now in position to meet the requirements of the trade equally as well as any house in the country. Dr. Hazeltine, president of the above firm, leaves for Milan this week to take up his duties as Consul, leaving H. B. Fairchild, the general manager, in full charge of the business. We bespeak for the Doctor a pleasant journey, and feel sure that his interests could not have been left in better hands than with his able general manager.

Mr. Crawford, of the Hazeltine & Perkins Drug Co., has the reputation of being the greatest hustler "on the road" in the State of Michigan. We hear from one of his best customers that he is so busy that he has been known to strike a town without a hat. Crawford says it blew off the train, but some of his friends say no wonder—he won't wait till the train stops, but starts after scalps.

We are advised that Thos. Peck, of the firm of Peck Bros., wholsesale and retail druggists, has just returned from an extended trip to New York City and various points in New York State. We sincerely hope he has recuperated, as the extensive business of the firm requires the attention of all concerned. They have recently opened up a special factory for their famous headache powders.

⁂

THE GRINDER FERTILIZER COMPANY
OLD BONES BOUGHT.
HIDES &c.
OFFICE

VIII.

This is the end of hopes once high. Pa says amid his groans:
"His wreck and ruin were his own doin'; so grind him into bones."

⁂

Wholesale druggists can learn a practical lesson from the enterprise of Messrs. Williams, Davis, Brooks & Co., of Detroit. They erected a bridge from the second floor of their old building, across the street and through an alley, to the second floor of their new building. Stock and fixtures were thus moved without lugging them down to the street and up again. The inconvenience which usually attends removal of such stock through a busy thoroughfare was also avoided.

Once, during the argument in a lawsuit in which Lincoln represented one party, the lawyer on the other side was a good deal of a glib talker, but not reckoned as deeply profound or much of a thinker. He would say anything to a jury which happened to enter his head. Lincoln, in his address to the jury, referring to this, said: "My friend on the other side is all right, or would be all right, were it not for the peculiarity I am about to chronicle. His habit—of which you have witnessed a very painful specimen in his argument to you in this case—of reckless assertion and statements without grounds, need not be imputed to him as a moral fault or as telling of a moral blemish. He can't help it. For reasons which, gentlemen of the jury, you and I have not the time to study here, as deplorable as they are surprising, the oratory of the gentleman completely suspends all action of his mind. The moment he begins to talk, his mental operations cease. I never knew of but one thing which compared with my friend in this particular. That was a small steamboat. Back in the days when I performed my part as a keel boatman, I made the acquaintance of a trifling little steamboat which used to bustle and puff and wheeze about the Sangamon River. It had a five-foot boiler and a seven-foot whistle, and every time it whistled it stopped."—*Argonaut.*

⁂

MINNESOTA.

Charles T. Taylor of Duluth, Carl Lind and Frank Peterson of Minneapolis, and A. W. Ager of St. Peter, were the lucky four who passed the examination by the State Board of Pharmacy at the October meeting.

George B. Tretbar, of the firm of Stoddard & Tretbar, of Lamberton, has been visiting the World's Fair and his old home, Philadelphia, for the past three weeks—Albert R Halstead, of Mankato, taking charge during his absence.

Mat Deutch, for some years past manager at Joseph Kehrer's drug store at Jordan, has connected himself with Mr. Zettle of Shakopee, and purchased B. A. Kohler's pharmacy at the latter place. Mr. Zettle is not a druggist, but Mr. Deutch's experience and success are a guarantee of their prosperous future. Mr. Kohler will make his home in California and endeavor to regain his health.

Burglars broke into Chârles H. Bennett's drug store at Pipestone on the night of Sept. 29th. They took but a few small articles, but did some damage in forcing an entrance by the side door. A burglar in a prescription drug store is wasting his time, as he don't know the difference in price between an ounce of small-crystal muriate of cocaine and the same quantity of sulphate of zinc. If he does make valuable selections, he leaves a loop-hole for his capture. Mr. Bennett is prepared for those who want to try the operation again.

⁂

Advertiser: "Well, I've decorated this drug-store O. K."

⁂

CEMENT FOR PESTLE HANDLES.

For attaching a wooden handle to a wedgewood or porcelain pestle, Remington recommends that good sealing wax be melted and poured into the pestle hole, and that the handle be at once pressed forcibly in and held in place until the wax has hardened. —*Druggists' Circular.*

MISSOURI.

St. Louis:

The drug store of Paul E. Fiquet has been disposed of by the assignee at auction. There being no bidder for the entire stock and fixtures, it was sold out in lots to suit purchasers. We were sorry to learn of the necessary assignment, Mr. Fiquet being one of the oldest and most reliable druggists of St. Louis.

Adolph L. Bleisner is about to open a new drug store at the corner of Grand and Palue avenues. May success be his.

⁂

Try our Florida Water
Largest line of Tooth Brushes Cheap
Ice Cold Soda 5¢
Fine Candies & Sponges below cost
Our Head Ache Tablets are Dandies
All kinds of Soft Drinks

But he called the next day and the druggist had turned them over and added a little decoration.

Moral: Advertise in the drug journals.—*Judge's Library.*

⁂

Parke, Davis & Co. have added to their list of Compressed Tablets the following:

Acetanilid Aromatic.
Anti-Malarial.
Bismuth and Charcoal.
Brown Mixture Comp.
Calomel, 5 grains.
Calomel and Capsicum.
Charcoal, 5 grains and 10 grains.
Cold, No. 3.
Ferruginous, Blaud's, modified.
Ferruginous, Blaud's, 3 grains and 5 grains.
Heart Tonic.
Pepsin, Bismuth and Charcoal.
Pepsin Sacch., 5 grains.
Rhubarb and Soda.
Sulphur, 5 grains.
Sulphur and Cream Tartar.
Sun Cholera.
Voice.

Host: I hate to send you out in such a blustering night as this, old fellow.

Guest: It is raining pretty hard. I say, couldn't you loan me your umbrella?

Host: Certainly; and—er—I guess I'll walk home with you myself. I really need the exercise.—*Judge.*

⁂

NEW HAMPSHIRE.

P. Henry Boire has left the employ of Col. John B. Hall, at Manchester. Henry is now with Baril & Richards, and the Colonel personally meets all comers.

N. J. Marchand & Co. have opened a new store at Berlin Falls with a complete stock of drugs and fancy goods. Mr. Marchand has become well known during an eleven years' clerkship with F. L. Wilson & Co., to which his brother succeeds.

Graves & Co. (Dell R. Graves, registered pharmacist), Lancaster, have bought and renovated the Sullivan store, and are "in it" for the *drug* business. "Dell" is equally at home whether hunting bear or extolling the merits of "Alkaline Solution" or "Bugbane."

Nashua:

W. S. Senton has bought the G. W. Shaw store. The Colonel will be a welcome acquisition to the drug coterie of Nashua.

Dennis J. Hallisey, Nashua's youngest pharmacist, died quite suddenly last month.

The Nashua Drug Co. record a signal victory in their first battle with a "cutter." Outsiders will do well to ponder a bit before trying to revolutionize the trade in this city.

⁂

FROM THE PRESS-ROOM.

Foreman of Composing-Room: This baby-food cut is too wide. I can't get it in a single column space. What must I do?

Editor: Better smash it on the side with a hammer—guess it will do then. —*Exchange.*

And this is how the advertisement appeared.

⁂

UNUSUAL BARGAIN.—The following three books will be sold, for a limited time, at half their regular price. Prices quoted are strictly net cash with order:

UNTOWARD EFFECTS OF DRUGS By L. Lewin, M.D.	$ 1.00
MICROSCOPICAL DIAGNOSIS By Chas. H. Stowell, M.S.	1.50
SELECT EXTRA-TROPICAL PLANTS By Baron Ferd. Von Mueller.	1.50

GEORGE S. DAVIS,
Medical Publisher, Detroit, Mich.

CLEANING BOTTLES.

It is surprising, says Dr. F. Sawyer, how many persons persist in cleaning bottles with shot after the frequent cautions which have been given time and again. Nothing cleans bottles so easily as a handful of shot, which can be shaken into every corner until the glass fairly shines with cleanliness, but the danger of lead poisoning is great, even when the bottle is rinsed out with clean water, and it is doubly dangerous when there is no rinsing at all, as is frequently the case. Clean sand is a convenient and thorough bottle-cleaner, especially as the particles of sand which stick to the sides and bottom must be afterwards washed out to complete the process. When time is not an object, a bottle can be well cleansed by the aid of potato parings, but as they must be corked in and left to ferment, the plan is not expeditious enough for general use.—*Ex.*

Talcott, Frisbie & Co., wholesale druggists, of Hartford, Conn., have been making some long strides in simplifying their business and perfecting a system which will bring as much satisfaction to their customers as convenience to themselves. From the basement to the fifth story, order and system prevail. A power elevator carries goods from "cellar to sky-parlor," and speaking-tubes connect the different floors with one another and with the offices. Thirty-two electrical push-buttons attract attention to the speaking-tubes, and the whole scheme of the firm has been to reach the highest point of simplicity in handling their large stock of goods in connection with the filling of orders.

⁂

NEW MEXICO.

A. C. Ireland, Jr., is still at the old stand in Santa Fé, and reports business very good indeed. We are not surprised in the least, for in addition to the fact that Santa Fé is a good town, Mr. Ireland is sure to get his share of all that is going.

Mr. Pillsbury, of the firm of Pillsbury & Walton, left Albuquerque recently for a trip to the World's Fair and to look after his portion of an estate that was recently left him. We are pleased to hear of his good fortune, and trust he will return much improved in health as a result of his vacation.

Mr. Murphy, of the firm of E. G. Murphy & Co., Las Vegas, recently returned from Chicago and an extended trip in the East. He says Chicago has a fine show and he enjoyed it very much; especially was he pleased at the absence of anything like a display in the pharmaceutical line—a circumstance, by the way, that is commented on very frequently, and generally in the same manner: "Yes, indeed, we were glad to miss, for a few days at least, the sight of pills and fluids and the odor that is inseparable with an apothecary shop."

⁂

A CANDIDATE FOR THE BAR.

—*King's Jester.*

⁂

The baby rules the household; its health and comfort are of first importance. The use of sterilized milk as an artificial food for babies is growing rapidly, and with it a demand for the best sterilizer. Druggists will find it to their interest to keep posted on the subject. Messrs. Wilmot Castle & Co., Rochester, N. Y., manufacturers of the Arnold Steam Sterilizer, so popular with the profession, cheerfully furnish druggists with interesting information on sterilizing milk, on application. We advise the trade to write them, as they will obtain interesting inducements to handle the Arnold.

Indestructible Ink for marking casks, bales, sackings, packages, etc.—Bruised asphalt, 8 oz.; balsam of copaiba, 16 oz.; spirits of turpentine, 12 oz. Melt the asphalt in an old iron pot or saucepan over a gentle fire, and then add the balsam, stirring well; remove from the fire and stir in the turpentine, and place in a well-corked stone bottle for use. This liquid may be thinned with a little turpentine, and forms an indestructible ink capable of resisting salt water, wear and tear, age, etc.—*Exchange.*

⁂

OHIO.

Frank Bauer, of London, has deserted the mortar and taken up the grip for Duroy & Haines, having sold his store to J. R. Atchison.

Wert & Co., of Scott, have moved into their new store on Main street. They have spared no pains in fixing up their new place, and can lay claim to having one of the neatest and most modern drug stores in the State. Their fixtures are of the latest pattern, and eight new beveled plate-glass show-cases add greatly to the appearance of the place.

J. H. Hampshire, of Bowling Green, and E. A. Schubert, present manager of The Venier & McLaughlin Drug Co., of Archbold, have bought Geo. F. Weaver's drug store in Fostoria, and will carry on the business under the name of Hampshire & Schubert. They will take possession on Jan. 1, 1894. With one of the best stands in one of the best towns in Northwestern Ohio, the new firm has a prosperous outlook for the future.

After the depression of the past summer, trade is beginning to return to its natural channels. Of all classes of business the drug business was affected the least. Illustrating the restoration of confidence, read the list of new stores started within the past ninety days:

At Columbus: S. S. Watkins has opened a new pharmacy on West Broad street. C. F. Lentz has moved into an elegant room a few doors east of his old stand. J. H. Hames has removed from North Columbus to corner of Rich and Scioto, where he will be pleased to see his old friends. H. D. Westerville has fitted up a very neat pharmacy on the North Side, and reports very good business. E. S. Murphy has opened a new store, corner Naughten and Fourth; Mr. Murphy was formerly with Ackerman & Co.

At Portsmouth, H. E. Green has opened a branch store in the East End. Frank Amann has opened a branch store opposite the postoffice, where the pleasant smile of his brother Charles greets the prospective customers.

Higgins Bros., of New Carlisle, have opened a branch store on Main street, Springfield. H. D. Carnell, Springfield, has refitted his store and now has one of the finest in the State.

Toledo:

Bower & Friedrich are making quite an improvement in their store on Cherry street, by putting in a metal ceiling, glass-front counters, and also a large bronze mortar and pestle over the front entrance.

Faber & Acker have opened a very fine drug store at the corner of Ashland avenue and Bancroft street. They have a good location and will no doubt capture their share of trade.

⁂

ILLUSTRATED HUNTING TERMS—AN IRISH SETTER.
—*Wrinkle.*

⁂

DR. LEO EGGER, OF VIENNA, ON AMERICAN MANUFACTURING PHARMACY.

The eagerness of Americans in general to learn what European travelers think of our land and its institutions, and their excessive sensitiveness to the severe criticisms of some distinguished foreigners in the past—Charles Dickens, for example—have long been regarded as constituting an amusing foible in the national character. The all-exaggerating humorist has not failed to seize upon this trait, and to make all manner of fun of the enterprising journalists who send their reporters out in tugs to greet the arriving celebrity and ascertain his "impressions of America" ere he puts foot on our soil!

Certain it is that an unusual interest attaches to the comments of intelligent Europeans, if made with proper care after ample and adequate opportunity for observation, reflection, and comparison. Such interest is not found wanting in a recent contribution to the well known *Pharmaceutische Post*, by Dr. Leo Egger, of Vienna, on the subject of American pharmacy in general and, notably, the development of industrial pharmacy as typified in our most extensive manufactories. We quote briefly from Dr. Egger's report:

"It remains for me to speak briefly of individual manufacturing establishments. This journal has previously contained such detailed reports on Parke, Davis & Co., of Detroit, that I need add but a few words respecting the internal operation of these laboratories which stand alone in extent and perfection of equipment. The most outrageous pedant is forced to unqualified admiration when he sees the painstaking care and caution to ensure reliability, with whicht he colossal manufacturing operations are conducted, and with which every single pill, tablet, solution, and extract is made actually and absolutely to contain what is claimed on the label. This is achieved by a remarkable system of graduated responsibility within the entire corps of officials, each superior being held accountable for the errors of his subordinates, should the real culprit not be detected.

"A visit to this factory shows that operations on a manufacturing scale are conducted at no sacrifice whatever of the accuracy and caution characteristic of our craft—on the contrary, that the extensive production renders possible a perfection in the preparations which would be inconceivable in work of lesser magnitude."

HE GAVE HIM A POSER.

Creditor (roughly): Say, when are you going to pay me that bill?

Debtor (genially): My friend, you put me in mind of a little child.

Creditor: I do, do I? Why?

Debtor: Because a little child can ask questions that the wisest men cannot answer.—*New York Press.*

⁂

TEXAS.

W. G. Lomax, of Waxahachie, has a good paying business.

A. W. Fife, of Arlington, has a beautiful retail store and is doing his share of business.

James & Wipprecht, of Bryan, have a desirable location and are doing a capital business.

Geo. G. Malkin is with J. M. Pettey, of Ennis. They are doing their full share of business.

Dr. L. C. Page, of Arlington, has one of the best paying businesses, for a small town, in the State.

Tracy McKenzie, of Mexia, is one of the best posted pharmacists in Texas and doing a nice retail business.

Tom DuLaney is now with the Dansby Drug Co., of Kaufman. Tom is all O K and will make friends anywhere.

Harper & Broadshaw, of Ennis, are live men and doing as good a prescription business as any in the Lone Star State.

B. W. Fearis, of Waxahachie, stands away up in G when it comes to a retail drug business. His store is beautifully arranged.

Business being quiet, J. F. Reynolds, of Pittsburgh, has taken advantage of the fact and gone on a ten days' hunt on the Sulphur. Report from camp has it that the Nimrods have killed several deer and many wild turkeys.

The firm of Kelly & Jones, El Paso, has been succeeded by Kelly & Pollard, Mr. Jones returning to his old home in Vicksburg. We note with pleasure the establishment of this new firm; both members are well and favorably known in the city and surrounding country and are sure to command a fine patronage.

Corsicana:

Lee Castle has charge of Castle's Pharmacy.

W. C. Booton, one of Corsicana's old reliable druggists, is now with Heaton Bros., of Cuero.

L. C. Reveare & Co. have an elegant store and are doing a good prescription business.

One of the best paying retail drug stores in Texas is that of E. A. Johnson, this city.

P. L. Tippit, proprietor of the Crystal Palace Drug Store, has one of the neatest stores in Texas and is doing a fine business.

Dallas:

The jobbing trade of this city report business very active. This may partially be accounted for by the Texas State Fair being open and the druggists taking advantage of the cheap rate offered by all railways.

Will R. Allen has taken the J. M. Pace, Jr., store and remodelled it, so that to-day it poses as one of the finest retail drug stores in the city.

Russell Rogers, for several years in the sundry department of Meyer Bros. Drug Co., has taken the old Will R. Allen drug store, corner of Elm and Ackard streets. He reports business very good.

The Elite Pharmacy is now owned by Gilbert La Baume, and doing a fine business.

Fort Worth:

The many friends of Geo. Dashwood will be sorry to learn of his being confined to bed with typhoid fever. A speedy recovery is wished by all.

H. W. Williams & Co. have had all their travelers in during State Fair, to aid in caring for their many customers who are buying holiday goods, drugs, etc. The order department is snowed under, and all wear a weary look from an unusually heavy business.

Robt. N. McKnight, buyer for H. W. Williams & Co., is to be found with a grin from ear to ear. On inquiry as to cause: "It's a boy!"

D. C. Weaver, the genial and popular head clerk at Ft. Worth Pharmacy, is still to be found behind the desk. Ask him about surgical instruments, and you will find him as well posted as upon pharmacy.

⁂

He'd Been There Before.

Outfield: Do you know enough about base ball to umpire a game?

Shortstoppe: I did once, but I know enough about the game not to do so again.—*King's Jester.*

⁂

Jobbing druggists are already receiving inquiries in respect to the sort of holiday novelties which they handle, and they are still more besieged by representatives of the firms who manufacture them. Judging by the novelties presented, the coming festive season is to be as well provided for as any previous year, despite the little flurry financially which many thought would make the coming a dull Christmas. Then the fact that the inquiries about them from out-of-town distributors seem to be very general in the matter of the points of the compass from which the inquiries originate, seems to indicate no particular favored locality, but a general better feeling at all points.—*Oil, Paint and Drug Review.*

VERMONT.

Geo. E. Williams, of Windsor, has been petitioned into insolvency.

C. F. Davis, having sold his store at Derby Centre, has opened a new one at Newport.

Rutland has a possible "patent medicine millionaire" in Frederick Fenn, who is pushing with surprising originality and success "Story's Kidney and Liver Cure," "Tried and True," "Kendall's Pectoral Balsam," and "Fenn's Root Beer Extract."

Rawson Brainerd, of St. Albans, now receives his customers and friends in one of the swellest "white and gold stores" in New England. The arrangement is A1, and was made with special reference to prescription business, of which Mr. Brainerd has a large volume.

Drew & Leonard, the latest addition to West Randolph's mercantile ranks, had the misfortune to be so badly damaged by water incidental to the fire in the photograph gallery over their store, that they were obliged to withdraw from active business until their store can be refitted.

C. D. Bagley, of St. Johnsbury, has gone into his new store, which will compare with any in New England—oak fixtures of Whipple's best design, and all modern inventions for convenience and the expeditious conduct of a drug business. With all the worry incidental to building, fitting, and moving, Mr. Bagley has kept the Dandelion Compound humming.

Burlington:

G. L. Lafountain has just returned from an extended tour of the West, taking in the World's Fair, Denver, Colorado Springs, and other points of interest. We warrant he saw in all his journeyings no better equipped pharmacy than his own.

F. L. Taft & Co. are sole agents for the Turkey Fig Cordial Co., of Smyrna, and are preparing to push that preparation vigorously. Formula furnished to physicians on application. It bids fair to become one of the big sellers.

Baupre & Lowry have moved into their new store, one of the finest in New England, of rich design in white and gold, panels of bevelled plate, with bevelled plate mirrors in tasty arrangement. Messrs. B. & L. have a very inviting corner in which to transact their ever growing business.

Lyman & Hall report a large deficit in transient trade this summer; nevertheless the boys have been right in it, and 'tis hard to gain the buyer's ear, so busy is he.

Brandon:

The Central Pharmacy, a corporation with E. B. Hyde as resident manager, is the latest mercantile venture in Brandon.

Apothecaries were ever lovers of music and patrons of the arts, but Geo. A. Crossman is the first in this section to equip a drum corps. Certainly the boys could not have a more generous and affable patron.

⁂

A GOOD THING TO KEEP UP.

The man who is just commencing in business will be as polite as possible to all who visit the store. Great care will be taken to introduce customers to the different departments and show up the "new stock of goods."

The new merchant does not expect to sell everybody who calls at the store the first time, but he desires to make a deep and solid impression upon the minds of all callers, so they will come to him when they do wish to buy. The same polite manners should be carried out in old-established houses, and salespeople should call customers' attention to goods as much as possible; of course, use good judgment and not overdo the thing.—*Economist.*

Hungry Higgins: Madam, I useter have as good a home as anybody till misfortune overtook me.

Mrs. Potts: Indeed? And what was the nature of the trouble?

Hungry Higgins: My father-in-law lost his job.—*Indianapolis Journal.*

⁂

"If you dare to run under me, Mr. Skinner, I'll be real mad with you."—*Life.*

⁂

WISCONSIN.

There is a decided improvement in business, and druggists are correspondingly happy.

Good men are always sought. This, no doubt, accounts for the fact that Louis Reichel, a popular young "pill smasher" of Sturgeon Bay, was elected Mayor of that city by a rousing majority.

Andrew Sexton, of the firm of Sexton Bros., druggists, Marshfield, and Miss Ida Doem, were married at 5 o'clock Oct. 25th, at the residence of the bride's parents. The young couple went North on their wedding trip, to be absent some time.

Gieseler & Lochner, Racine, have caught the spirit of the times and made notable changes and improvements in their place of business. In addition to painting and decorating, a "balcony" has been built extending across the back of the store and half-way down on either side. The design is something entirely new and pleasing.

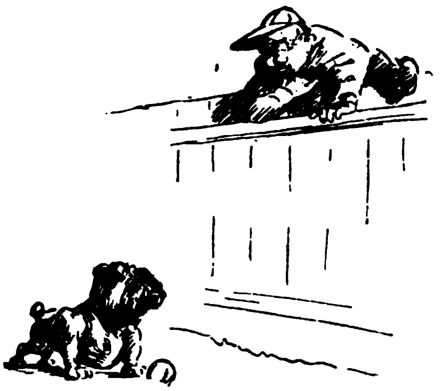
J. E. Barnstein, of Manitowoc, will soon spring a surprise on his friends by exhibiting in his east window a four-foot miniature of the Administration Building, of World's Fair fame; it is of his own construction, and in every sense except size resembles that model of architecture. Mr. Barnstein has greatly improved the interior of his store with decorations and new show-cases.

D. R. Jones, successor to Cressey & Jones, Milwaukee, is one of the live young business men in the city. He enjoys the patronage of the very "elite," and in order to keep pace with the growing requirements of his business he has recently gone to great expense in fitting up his store, in the way of painting, frescoing, decorating, etc. The whole interior has been changed and remodeled, and everything possible done to make it inviting and pleasant.

R. D. Pulford, Mineral Point, is dead. Mr. Pulford was the veteran druggist of the State, having been in business for nearly fifty years in this one place and same location. He was a man of large acquaintance and had many friends, and was a member of the State Board of Pharmacy at the time of his death. He was a charter member of the Wisconsin State Pharmaceutical Society, and never missed one of the meetings from the time of its organization till the present time. No member of this Association would be missed more.

Fire, presumably caused by spontaneous combustion, broke out in the cellar of Foster's drug store, Appleton, at 3.30 A.M., Nov. 2. The heat from the burning oil, resin, etc., was so intense as to char the wall paper and melt the labels off the bottles in the store above. The resinous smoke penetrated everywhere and ruined all goods stored in drawers, also the cigars and fancy goods. The fire was confined to a small area in the cellar, and was extinguished with a loss of only a few hundred dollars to the building, fully covered by insurance. The loss on the stock is difficult to estimate, but is amply covered by an insurance of $4,000.

⁂



"AFTER THE BALL IS OVER."—*Puck.*

⁂

THE WAY THEY DO.

"Papa won't buy me a bow wow," cried the little daughter of a very rich man.

"Don't cry, dear," said the mother, soothingly; "when you are grown he will buy you a puppy with a title."—*Detroit Free Press.*

⁂

MISCELLANEOUS.

Greenville, Fla.:

Will Perkins, constituting the Co. and buyer of J. F. Sockwell & Co., Greenville, is confined to his room with bilious fever. We sincerely trust it will not be long before he may again be found at his post.

Texarkana, Ark.:

J. P. Lightfoot will during November sell off all his stock possible, and on Dec. 1st move what remains to Little Rock and there open up a fine pharmacy in connection with A. W. Reed, who has been for years with Bradford & Dowdy.

Tucson, Arizona:

Dr. A. C. Wright, a graduate of the University of Michigan, has recently opened a very neat pharmacy in Tucson. The Doctor will still practice his profession as well as superintend the management of the store. He is also a member of the Territorial Legislature, and is making an enviable reputation for himself in politics.

New Orleans:

Finlay & Brunswig are in their new quarters. This firm, finding their old quarters at the corner of Magazine and Gravier streets inadequate, succeeded in leasing five buildings at the corner of Tchoupitoulas and Gravier streets, where they have removed. This gives them a total floor-room capacity all told of 120,000 square feet. The first floor of their main building is devoted to the sales office, shipping clerk's office, and the drug-packing and shipping room; the annex thereto contains what is known as "the wet goods" department, consisting of oils and liquid drugs. Upon the second floor are found the general offices, private offices, as also the department for druggists' sundries, sponges, chamois skins, toilet requisites, brushes, etc.; the annex thereto contains capacious warehouses for patent medicines, mineral waters, proprietary articles, etc. The third floor contains the laboratory and manufacturing department. The fourth floor is devoted to the glassware generally. It is quite a treat to survey this immense establishment, and any of our friends going to New Orleans will be amply repaid if they visit the new buildings of Finlay & Brunswig, corner of Tchoupitoulas and Gravier streets.

New York City:

One of the most conspicuous stores in New York City is the new pharmacy of Fraser & Co., 262 Fifth avenue. A five-story building is most admirably adapted and magnificently arranged for the promotion and execution of the science of pharmacy in all its branches. The first floor is devoted to receiving customers and dispensing prescriptions. Each clerk has everything separate that is required for manipulating any prescription. Mortars, graduates, weights, bottles and corks, are arranged for each man in distinct compartments. The labels are all written by one person, who in this instance is a most beautiful penman. The second floor is devoted to Mr. Fraser's private office, library, and surgical appliances. The library consists of the principal medical and pharmaceutical books and journals published, the latter being in complete sets. The fourth floor is used as an analytical laboratory, presided over by an expert chemist. This department is a new departure, which is a commendable one, as is readily shown by the rush of work. The top floor is used for manufacturing, and is well furnished for that purpose. The store is solidly and elegantly furnished in polished quartered oak. The architecture is unique and new in design, making a combination unusual in detail but handsome and practical in effect.

CHARLES F. WELLER,
Vice President and Manager Richardson Drug Co.,
Omaha, Neb.

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INDEX OF CONTENTS.

Editorial. PAGE

Charles F. Weller.... 529
"The Old Order Changeth" 530
A Doctor's Grievance 531
An Odious Traffic 531
Some Good Out of Nazareth 532
A Noble Career 532
Another Road to Fortune 533
Wine of Cod-Liver Oil 533
On the Right Track 534

Original Articles.

PRACTICAL PHARMACY.

Contribution to the Assay Methods for Determining the Active Principles in Drugs and their Galenical Preparations. By Dr. Karl Schwickerath 534
Why Physicians Dispense Their Own Medicines. By Fax Fox, M.D. 539

CHEMISTRY.

Melting-Point of Cocaine Salts. By John M. Francis 541

BOTANY AND MATERIA MEDICA.

Poisonous Plants and their Poisons. By J. Guardia, F.R.M.S 542
Thymus Serpyllum, Lin 548
Nut Cracking 548

Correspondence.

London Letter 549
Berlin Letter 551
New York Letter 552
Chicago Letter 553
An Open Letter on the Sale of Poisons 553
Book Reviews 554
Facetiæ 555
Clippings and Translations 557
Pharmaceutical Progress 563
Notes and News 567
Publisher's Department 571

CHARLES F. WELLER.

A varied, active and successful life has been that of Mr. Charles F. Weller, the Vice-President and Manager of the Richardson Drug Co., Omaha, Neb.

Born in Ohio, May 16, 1844, Mr. Weller became a denizen of the West through the removal of his parents to Missouri in 1859. At the early age of seventeen he enlisted in the Union Army, and was in active service during two and a half years—a period unbroken by a single furlough. The young soldier participated in all the general engagements of the Army of the Cumberland, and in Sherman's march to the Sea.

In 1865 Mr. Weller was married to Miss Kate McElwain, of Beaver, Pa., and in the winter of the same year he accepted a position as traveling salesman for the wholesale drug house of Flachs & Co., of Quincy, Ill. In 1869 the firm was changed to Sommer, Keyes & Co., and in 1872 to Sommer & Weller. Retiring from the latter firm in 1873, Mr. Weller was engaged as traveler for Richardson & Co., St. Louis, for two years, when the firm of Sommer, Lynds & Co. was formed at Quincy, Mr. Weller being the company. After the lapse of three years he returned in 1878 to Richardson & Co., and thereafter remained constantly on the road in their employ, visiting all the larger towns west of the Mississippi, inclusive of the Pacific Coast.

In this capacity Mr. Weller showed his mettle, and achieved a truly phenomenal success. When the Omaha house was founded in 1887 he was chosen Manager and Vice-President. Seven years have now elapsed since his assumption of these responsibilities—years which have not failed to bring their tribute of honorable and merited success.

Mr. Weller is an influential member of the N. W. D. A., in whose deliberations he has proved a judicious and effective speaker. At the last convention, held in Detroit, he was chosen chairman of one of the most important committees—the Board of Control.

A broad-minded and energetic business man, amply endowed with force and executive ability, Mr. Weller is likewise noted for his genial and winning social qualities. Life to him means not alone the accumulation, but also the enjoyment, of the world's goods. Yet in the heyday of his health and vigor he may reasonably count on realizing the good wishes of his many friends for a long and prosperous future.

"THE OLD ORDER CHANGETH."

Not many years ago the writer of these lines was one of numerous interested listeners to a wail of lamentation apparently wrung from the entrails of a prominent Michigan pharmacist, over the alleged decay of his profession. We well recall the pathos of this modern Jeremiah, as he enumerated the successive invasions into the time-honored domain of the apothecary, and the burst of indignation with which he finally declared that his brethren had been bereft of all sources of profit save the soda-fountain and the milk-shake.

Where the brunt of the blame was made to rest we do not now recall; but the same refrain has since been chanted in all possible variations, and the objects of indignation are usually the modern manufacturers of chemicals and pharmaceuticals. With laughable exaggeration, the manufacturing chemist is at times regarded as the source of the various tendencies which have without doubt contracted the sphere of the druggist's activity. It is unquestionably true that the retail pharmacist of our day does not perform the same variety of functions as of yore; that he purchases many preparations which he formerly produced; that the practice of his profession has been modified, in some respects radically. But it is utterly absurd to ignore the fact that the modern manufacturer is the creature—not the creator—of the prevailing conditions, or to assert that the profession of pharmacy has sacrificed an atom of its importance or dignity amid these shifting elements. Let us see:

In the first place, nothing could be more manifest than that the manufacturing chemist and the pharmacist are both the result of the perfected subdivision of labor rendered possible by modern inventions, modern machinery, and accumulated capital. In chemistry and pharmacy, as in every other human activity, there have been profound changes wrought by new industrial conditions. The ingenious and cunning gunmaker of ancient days has been constrained to give way to a Remington factory; the famous establishments of Sheffield have in large measure supplanted the humble tool-shop; and, likewise, in pharmacy is the same tendency exemplified as a result of identical conditions.

Who summoned the manufacturer into existence? The times—in other words, the demand. Who maintains him and furnishes aliment for his enormous workshops and laboratories? The retail and wholesale pharmacist.

Were there no natural and legitimate place for the large manufacturer amid modern industrial conditions, he could not sustain himself a single day. Responsive to new social demands he has sprung into existence, and will remain an important factor until the reason for his being is either modified or obliterated. It cannot be too distinctly borne in mind that however enterprising in character, his agency is largely passive—he avails himself of new appliances and inventions; and it cannot be denied that the vast public have gained in the greater economy of extensive manufacture and in the superior quality of medicines produced by an agent to whom reputation is the very breath of life.

Meantime, has the pharmacist suffered in reality from the change? Is his office less responsible, his function less skillful, or the need of his intelligent education less imperative? Assuredly not. The alleged interference of the manufacturer with his former labors and former profits, proves, when analyzed, to mean simply that he has been released from much manual drudgery and now has leisure and opportunity for the higher, more intelligent labors worthy of an educated man. Relieved from the burden of tedious and mechanical processes, he becomes responsible for the quality of the drugs which he buys of the manufacturer and sells to his patron. The pharmacist is not a mere merchant, buying here and selling there—trading and bartering without guarantee of quality. He cannot escape his accountability; and to meet it fairly, he must be equipped with the knowledge and training which will enable him to test, assay, and guarantee his wares.

Does such work demand less capacity, less education, or entail less reponsibility than the labor of the old-time apothecary in producing his own calomel, chloroform, silver nitrate, or chloride of iron—in re-subliming his own camphor, or in manufacturing his own extracts, pills, etc.? Not one whit. The man who can assay a chemical product and guarantee its purity—who is familiar with the tests which the manifold alkaloids of modern medicine have made necessary—who is not the dupe and prey of the manfacturing charlatan—is on a plane far higher than that of his ancient colleague of the traditional pestle and mortar.

We grant the justice of the pharmacist's complaint when he urges that the numberless patented and proprietary remedies have done away with his proper function, since they are sold by the bottle as so much merchandise and demand no compounding or manipulation of any kind. Aside from this, however, the changes mentioned have been fraught with equal benefit to the public and to the pharmacist.

Conceding that the inert and unprogressive pharmacist may under present conditions sink into a mere merchant—a mechanical trader—the fact remains that the profession has visibly advanced and that there has never been a louder call for men of training, learning and zeal than in the present-day pharmacy. The demand for brains and knowledge is as clamorous in our profession as in any other, and fortunately there is no dearth of cheering responses from the many capable and scholarly pharmacists who practice with profit to themselves and with honor to their craft.

A DOCTOR'S GRIEVANCE.

If the majority of pharmacists were called upon to enumerate the evils now working disaster to the great body of their colleagues and reducing the profits of their business, they would unhesitatingly declare the dispensing of physicians to be one of the most serious. The pharmaceutical world is agreed on this point, and should welcome with a cordial greeting any discussion which serves to make clear the causes of the habit and the part which the retailer himself has played in fostering it.

On another page will be found an explicit and open avowal from a medical man of long experience, who maintains that the dispensing habit is the last refuge of the physician provoked by ill-treatment and forced in self-defense to guard against the encroachments, the opposition, and the incompetency of his druggist. The Doctor obviously has a grievance; he complains bitterly, and not unnaturally infers that his own unfortunate experience is the rule rather than the exception.

To those who have fancied that this practice of physicians' dispensing was without justification of any kind, the Doctor's plea of self-defense will be a novel one. For our own part, we do not believe that the inconsiderate treatment which he has received from druggists who criticised his prescriptions, who submitted them to the inspection of rival practitioners, who misrepresented his motives, and who proved a thorn in his flesh by their disastrous interference between himself and his patients, is by any means common. Charlatans and schemers are the bane of all occupations: doubtless retail pharmacy is more or less infested; but it is emphatically not true that the majority of retail druggists are selfish tricksters habitually resorting to the disreputable tactics which aroused our contributor's wrath. On all hands we hear the testimony of medical men themselves in just tribute to the courtesy, the disinterestedness and the intelligence of pharmacists.

The fact remains, however, that no class of men will suffer habitual imposition without eventually retaliating as best they can. And for the exceptional druggist who through grasping greed, churlish discourtesy or stupid incompetence estranges the very patrons whose friendship he should foster and whose enmity costs him so dear, we have not an atom of sympathy. Doubtless the habit of dispensing by the doctor has its origin in sources over which the pharmacist has little control; but undeniably he has it in his power to aggravate or mitigate the evil, and he can achieve no mean success in this respect by a habit of courtesy, accommodation, and strict neutrality as between rival practitioners. Other means are to be deprecated. Medical men will not be coerced. Conciliation and forbearance cannot fail to reduce the dispensing evil: aggression means irritation of the physician and, ere long, his active retaliation.

AN ODIOUS TRAFFIC.

It can never be urged that the BULLETIN has shown any lack of frankness in its expressions—more or less respectful—concerning the character of the Non-Secret business. On this subject we hold strong convictions; they have been expressed with a plainness of speech which left nothing to desire, and our past censure has called forth an attempted defense from the most notorious apostle of the piratical craft. Let us examine the innocent shield behind which refuge is taken, quoting as follows from his self-chosen platform:

"Non-secret medicines are simply ready-made prescriptions for household use, pharmaceutically prepared without secrecy or fraud. . . . . *Non-secret medicines do not in any way imitate or simulate patent medicines,*" etc.

All very lovely, indeed—in theory. In fact, however—and here we appeal to any druggist of experience—the non-secret traffic is sustained almost exclusively by appropriating the advertising of the leading patent-medicine makers; by devising formulas which are urged for sale on the *very ground* that they imitate and replace well known patented nostrums; by simulating labels, containers, wrappers and packages as closely as the law or the patience of the victim will permit. Is there any question that the non-secret people derive their chief income from thus "plucking" the patent-medicine men? Are not the entire tribe looked upon with the contempt, and made to suffer the reprobation, of the better elements in all branches of the drug trade?

"Why sell Smith's Ointment or Jones's Cough Cure?" was long their cry: "We have something just as good. By a little push and persuasion you can sell the article we offer under your own label, can secure the advertising, and can pocket the profit."

The druggist who innocently yielded to a temptation so cleverly masked, soon found to his sorrow that the imposition was recoiling upon himself with unexpected violence. Having become the sponsor and the guarantor of the nostrum furnished, its failure—due either to the stupidity of the purchaser in mistaking his ailment or to the worthlessness of the compound itself—was laid at the door of the druggist, not without some reason. When a patent medicine is sold, the druggist is not held accountable for results; the sale of a non-secret substitute involves *his* endorsement, hence his responsibility for the action of the remedy; and *his* is the loss in trade and reputation whenever the results fail to ensue as expected. Recognizing the danger, the overwhelming majority of pharmacists decline stoutly to touch the non-secrets; and it is an incontestable and gratifying fact that the whole wretched traffic is on the decline.

An actual incident in the recent experience of a correspondent furnishes forcible proof of the injury a druggist is most apt to inflict upon himself by an active interest in some non-secret substitute. Our correspondent, receiving a call for Hood's Sarsaparilla, handed out a bottle of the genuine preparation. The purchaser, after examining it very intently, with manifest surprise, paid the price and handed the druggist a parcel which proved to contain a close non-secret imitation of Hood's article. "They tried to make me believe at a store up the street," he added, "that what I really wanted was no better than this, and I allowed myself to be persuaded by the man's assurances and paid for the bottle. After coming away, I felt utterly disgusted at having something forced on me in this way. I now have what I want. You can keep that stuff."

Every man knows the feeling of resentment which follows a purchase made against his better judgment, under a sort of compulsion from a glib-tongued salesman. You enter a furnishing store, for example, intent upon the purchase of a black cravat. Mr. Know-it-all straightway informs you that he has a beautiful red article which is more fashionable and matches your complexion perfectly; and under mental protest you buy what you do not want. Unless your disposition is abnormally amiable and forgiving, you will bear that shop a grudge and ever after will make your purchases where people are given what they ask for without parley.

In the drug business, as in all others, the few cents extra profit form a very slight recompense for the ill-will which almost invariably follows transactions in which the dealer thrusts upon his customer an unwelcome purchase. The whole policy is short-sighted, mistaken, and absurd, as the druggist soon learns to his sorrow.

But meantime, what has the doctor to say when he observes that his druggist, not content with a passive agency in the sale of nostrums which are actually demanded, becomes an aggressive and interested party to an evil so pernicious to the public health and to his own income? That he is little pleased with the spectacle, we may be assured; he takes effective measures accordingly, and the druggist learns only too soon to curse his own shortsightedness and the entire tribe of parasitic leeches whose dupe he has unwittingly become.

This then is the true character of a traffic which threatened at one time to assume ominous proportions. But its danger was noted, and its days are now numbered.

Needless to add that we are not the champions of the patent-medicine industry, and that the welfare of the latter is a matter of small concern to us. The layman's use of patented preparations works evil enough; but such evil is open, glaring and perceivable in the fierce light of publicity. Not so with the non-secret traffic which works in the dark, uses the druggist as its catspaw, appropriates, imitates, and filches from every quarter, widens the scope of the nostrum-bane, and wrings profit from the common loss of the patent man, the druggist, and the consumer. The first is its victim, the second its dupe, the last its prey.

SOME GOOD OUT OF NAZARETH.

When our German cousins across the water wish to express their horror of all that is cheap and commercial in science, they have a very interesting way of dubbing it American, and "Amerikanismus" is a ponderous German noun which comprises untold evils. The truly good in the land of the fire-eating Kaiser are never at a loss for a strong designation when they encounter the philistine or the vulgar—it is all "Amerikanismus," and, of course, there can be no good in the offending object.

That the term is, however, beginning to lose much of its odium, is evident from the address of Henry Carrington Bolton, Chairman of the Section on Bibliography, Congress of Chemistry, held in Chicago. Mr. Bolton states that during one of his tours he was told by an eminent librarian of a German University: "You Americans are doing more and better work in bibliography than all the nations of Europe taken together." Singular as it may seem that the Germans, despite their superb collections of books, should permit Americans to perform the best work in special and general bibliography, the reason was very tersely stated by the German librarian—"Ach, mein Freund, das Geld fehlt."*

In mentioning the various monumental works which are the glory of American bibliography, Mr. Bolton alludes to the *Index Medicus*, edited by Dr. John M. Billings and Dr. Robert Fletcher, in words of praise scarcely inferior to the eulogy of the London *Lancet* when it declared *à propos* of the same journal: "Its discontinuance would be almost a calamity for every intelligent student and practitioner of medicine. . . . It is a marvel of accuracy and completeness."

A NOBLE CAREER.

The comparatively sudden death of Sir Andrew Clark, the famous London practitioner, terminates a striking, strenuous, and beneficent career. Adequate justice can scarcely be done to the wide range of his good offices, to his tender-hearted, conscientious devotion, and to the extraordinary fertility of resource which enabled him to restore the strained and toppling energies of many a hard-worked man and neurotic woman. He was essentially the counselor of those who suffered from the storm and stress of modern commercial and social rivalries, and he found a fitting field for his commanding talents in the great metropolis where so many succumb to the pace that kills.

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* "Ah, my friend, we haven't the money."

Familiar to the American public chiefly as the medical adviser of Gladstone, whose wonderful powers he has done so much to conserve, he was no less the guide and oracle of many of the high-pressure victims who found their strength forsaking them in the merciless strain of excessive mental application. "Scores, nay hundreds of cases," we are told, "might be selected from his record in which people were brought back from the gates of death by means of his wonderful care, combined with his acuteness of perception and width of knowledge."

To those who had recently met or consulted Sir Andrew Clark, he seemed in all the hight and fullness of his power. Having spent his life in preaching the gospel of temperance in labor, and in undoing the ills of overwork, by a singular perversity of fate he himself became the victim of the evil which his energies had been lavished to mitigate. Sir Andrew was only 67, but in the last twenty-five years he had done the work of forty. His too early and deplorable death adds another to the long list of admonitions that no mortal man can habitually concentrate his faculties upon problems which tax at once the mind and the emotions, without a disastrous collapse.

Yet who would speak a word in detraction of such a generous error? The mistakes of the brave and noble are preferable to the sordid cautions of those absorbed in miserable aims which end in self. And so let us dismiss this inspiring figure now vanished from the scene of his labors and sacrifices, with a full sense of the loss to medicine and humanity. Peace to his soul, and all honor to a good man's memory!

ANOTHER ROAD TO FORTUNE.

The attention of druggists has recently been called, through the advertising columns of a prominent pharmaceutical journal, to the alleged saving to be effected by the use of powdered assayed drugs for the preparation of tinctures, in lieu of reliable fluid extracts. A list of forty-four tinctures is presented in tabular form, one column showing the cost of 16 ounces of each tincture prepared from the drug; another column, the cost of the same tincture made with the fluid extract. The average of the forty-four items is $29\frac{2}{11}$ cents per 16 ounces in the former case; $40\frac{3}{11}$ cents in the latter.

Now, observe the dubious economy of the powdered drug. The difference in cost is, then, 10 cents and a fraction per 16 ounces. An educated pharmacist will prepare in his own laboratory an average of 2 lbs. of tincture in each batch, and will turn out a very fair day's work if he produces five batches, or 10 lbs. of tincture. The saving—or rather, the "earning"—will accordingly equal a trifle over a dollar a day of ten hours, and this will be the sole compensation for his labor!

Whether an intelligent man cannot make a far more lucrative use of his time in attention to his general duties and the commercial department of his pharmacy, is a question readily answered. That the daily saving of a dollar is a most inadequate return for the labor involved, and will prove injurious to more important interests thus inevitably neglected, cannot admit of a moment's doubt.

We may, moreover, very properly cite the fact (as an indication of the advantage to be gained by using fluid extracts for the manufacture of tinctures, wines, syrups, elixirs, and similar preparations) that the Revision Committee have adopted formulas directing that fluid extracts be used in the preparation of Syrup Ipecac, Tincture Ipecac and Opium, Wine of Ipecac, Mixture of Rhubarb and Soda, Syrup of Krameria, Syrup of Rhubarb, Syrup of Rubus, Compound Syrup Sarsaparilla, Compound Syrup of Squill, Syrup of Ginger, Belladonna Liniment, etc.

WINE OF COD-LIVER OIL.

Notwithstanding the many years' experience of Detroit's manufacturer of "Non-Secrets" in imitating the preparations of others, his last venture in this line does not do him credit. Were this the only instance in which an unscientific preparation was sent out teeming with imaginary merit, it might be forgiven with an admonition to go and sin no more; but these "non-secret" appeals to the desire for benefit in some, and to the love of novelty in others, are becoming so flagrant that silence ceases to be a virtue. It is no recommendation to such compounds that their virtues (?) are clothed in pseudo-scientific verbiage, which does indeed appear most wise and learned, but is in reality a mask of deception. What have we in this vaunted compound? The proprietor claims that it contains wine, a little iron, and the active principles of cod-liver oil — morrhuine, butylamine, amylamine, iodine, bromine, and phosphorus.

This seems a fair statement in truth, but when we begin to sift it we are forced to the inevitable conclusion that Messrs. Frederick Stearns & Co. are relying upon the credulity of the pharmaceutical and medical professions in their attempts to introduce a compound which is in direct opposition to the results of all modern investigation.

How much iodine does the best quality of cod-liver oil contain? An average of about *three ten-thousandths* of one per cent.; of phosphorus and bromine a corresponding abundance; so the reader can easily determine the value of this compound in so far as it depends upon iodine, bromine, and phosphorus. Stearns & Co. know, or should know, that although cod-liver oil has been known for many years and has been studied by hosts of brilliant men, both chemists and physicians, the consensus of opinion still remains that its beneficent action is due to its easy assimilation and nutritive properties. Although probably conversant with this fact, they see in the conclusions of two speculative Frenchmen a chance to foist upon a suffering public a compound whose promises are so bright and whose taste is so pleasant that even the printed description on the label thereof is interspersed with gleaming rays and surmounted by a canary bird and heraldic devices.

In adopting the discoveries of the above scientists who thought they had found the curative agents of *pure* cod-liver oil in the decomposition-products of livers, excrement, and intestines of cod allowed to rot in bacteria-haunted casks, why did he not complete his list by inscribing on his label with amylamine, butylamine, and morrhuine, those other "active medicinal" decomposition-products discovered at the same time and by the same scientists, viz., hexylamine, hydrodimethylpyridine, and the highly poisonous aseline which was associated with his highly lauded morrhuine?

All educated physicians are aware that these so-called active principles are not found in the clear "virgin oil" manufactured by modern scientific methods, but only in the dark oils which are fit solely for leather-softening, and especially in that witches' broth which was manufactured years ago by allowing the reeking mass of livers to rot until the hepatic tissues fell to pieces and the oil oozed out and, becoming loaded with the above-mentioned "essences of filth and bacteriological action," was collected and sold as Oleum Morrhuæ. After this miserable stuff had been discarded for a decade, we have it presented to us again "as represented by its active medicinal constituents" combined with peptonate of iron, iodine, phosphorus, and wine. Forsooth, a sweet-savored sin-offering upon the altar of Quackery, possessing both the oil (25 per cent.) and the wine, and only lacking the avenging fires of outraged professional decency!

ON THE RIGHT TRACK.

The notice to applicants, recently distributed by the Michigan Board of Pharmacy and embodying their latest regulations in the examination of candidates for honors as Registered Pharmacists and Assistants, are practical, intelligent, and commendable in every respect. The members of this body have wisely contented themselves with such exactions as are suggested by a zeal for pharmacy, tempered by good sense, and have avoided Utopian extremes. The latest additions to their code will bear good fruit. We may doubtless look for further regulations along the same lines as fast as general pharmacal sentiment will permit.

PRACTICAL PHARMACY.

CONTRIBUTION TO THE ASSAY METHODS FOR DETERMINING THE ACTIVE PRINCIPLES IN DRUGS AND THEIR GALENICAL PREPARATIONS.*

BY DR. KARL SCHWICKERATH.

Some time ago Van Ledden Hulsebosch, of Amsterdam, proposed a new method for the alkaloidal determinations of galenical preparations,† in which he employs an apparatus described by Smetham—a so-called perforator, hence terming this process the "perforation method." This new method, based upon the uninterrupted extraction of an extract-solution, with ether or any other light liquid (petroleum ether, benzene), was claimed by Van Ledden Hulsebosch to possess such a large number of advantages that I was prompted to give it a thorough trial. I desired specially to apply this perforation method—tested by Van Ledden Hulsebosch only with extract of cinchona and extract of nux vomica—to the alkaloidal assay of drugs and extracts of the U. S. P.

Of all reliable methods hitherto known for the determination of alkaloids in extracts, we may regard the lime-ether method of Dieterich‡ as the shortest and simplest; but to be utilized with the preparations of the U. S. P., it requires modifications which then cause the method of appear unpractical. The extracts of the U. S. P. contain in many cases—in consequence of using alcohol in their production—besides fat and wax, chlorophyll. With the narcotic extracts of the German Pharmacopœia this is not the case, the assaying process in the latter instance being accordingly simpler in character. Beckurts' method ‖ produces good results with chlorophyll-bearing extracts; but it is tolerably complicated, requires constant attention, hence demands much time. In the laboratory of a manufacturing house, however, where a large number of alkaloidal determinations must be daily executed, whether with crude drugs, solid extracts, or fluid extracts, what we need most of all is a method of minimal tedium, yet reliable. According to my experience these requirements are satisfied by the perforation method of Van Ledden Hulsebosch. While the perforator works automatically, the chemist may devote himself to other labors. In this manner I have executed several hundred assays, and with such good results that I can recommend this method to all large pharmaceutical laboratories.

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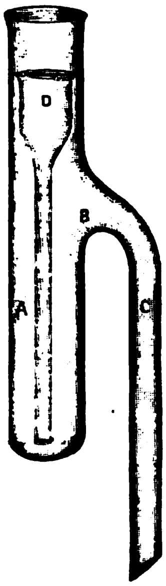
* Contributed in German simultaneously to the *Pharmaceutische Rundschau*, and translated by Joseph Helfman.

† *Pharm. Centralhalle*, 1893, p. 101, and *Pharm. Rundschau*, 1893, pp. 83 and 186.

‡ *Pharm. Centralhalle*, 1887, No. 3; *Pharm. Rundschau*, 1891, p. 260, and 1892, p. 192.

‖ *Pharm. Rundschau*, 1891, p. 261.

In my work I do not employ the Smetham apparatus recommended by Van Ledden Hulsebosch, but rather one made in accordance with a suggestion of Bosmann. The accompanying cut illustrates it, and for details of description I refer the reader to an article with cut, in the *Rundschau*, 1893, p. 186. This apparatus possesses several advantages over the Smetham affair: First, it is cheaper; a chemist at all familiar with the glass-blower's art can readily make one himself. Secondly, we are here enabled to introduce a small strip of litmus paper into the extract solution for the detection of the reaction. Thirdly, at the close of the extraction, the layer of ether over the extracted solution can be transferred to the flask by carefully inclining the apparatus. And lastly, the apparatus is more readily cleaned and perhaps less fragile. It works admirably.



In the following report I submit the results obtained, and also the *modus operandi:*

BELLADONNA LEAVES AND ROOT, HENBANE LEAVES, STRAMONIUM LEAVES AND SEED.

I. ASSAY OF THE DRUGS.

Twenty grammes powdered drug (40 grammes hyoscyamus leaves) are digested with 150 c. c. of a weak Prollius mixture* (with stramonium seed only 100 c.c. are requisite, whereas with henbane leaves 200 c. c. are to be taken) for twelve hours, shaking frequently. For the latter purpose, the most serviceable thing is an "agitator" run by water. Then permit to deposit and filter off through cotton 75 c. c. (with stramonium seed 50 c. c., with hyoscyamus leaves 100 c. c.) of the clear ethereal liquid corresponding to 10 and 20 grammes of drug. This is placed in a shallow glass vessel; add 8 c. c. of water, 2 to 3 c. c. of dil. sulphuric acid (2.5 per cent.), and set aside in a moderately warm place, permitting the alcohol and ether to evaporate. The chlorophyll, fat, wax, etc., are hereupon deposited in small adhering particles, or in the form of a thin covering or skin upon the surface of the acid aqueous alkaloidal solution, though the latter seems almost colorless. (With hyoscyamus the liquid has a more brownish tint; with stramonium seed the appearance is oily.) This solution is now filtered through cotton or paper into the perforator, washing the vessel and filter with a little water and adding ether. The acid solution is washed with ether for about an hour; then, after adding 4 to 5 c. c. of dil. ammonia water (5 per cent.), extract three hours with ether. The ethereal alkaloidal solution thus obtained is evaporated to dryness, avoiding unnecessary heat as much as possible. This precaution must be observed especially with the henbane on account of the sensitive nature of the hyoscyamine. The evaporation is accelerated by using the bellows and passing a current of air over the solution.

The alkaloids are now dissolved in 10 c. c. $\frac{N}{10}$ sulphuric acid, the excess of acid titrated with $\frac{N}{100}$ caustic soda. I use tincture of cochineal as an indicator, since after a little practice it can be made to indicate the final reaction with great precision. In the computation, 1 c. c. of $\frac{N}{100}$ sulphuric acid was taken as corresponding to 0.00289 gramme of the mydriatic alkaloid.

Drugs thus assayed yielded the following values:

BELLADONNA LEAVES.

I	found	(*a*)	0.32 per cent.
		(*b*)	0.35 "
II	"	(*a*)	0.38 "
		(*b*)	0.37 "
		(*c*)	0.35* "

STRAMONIUM LEAVES.

I	found	(*a*)	0.23 per cent.
		(*b*)	0.23 "
II	"	(*a*)	0.29 "
		(*b*)	0.27 "
		(*c*)	0.26* "

BELLADONNA ROOT.

I	found	(*a*)	0.41 per cent.
		(*b*)	0.40 "
II	"	(*a*)	0.33 "
		(*b*)	0.36 "

STRAMONIUM SEED.

I	found	(*a*)	0.27 per cent.
		(*b*)	0.25 "
II	"	(*a*)	0.30 "
		(*b*)	0.32 "

HYOSCYAMUS LEAVES.

I	found	(*a*)	0.088 per cent.
		(*b*)	0.082 "
		(*c*)	0.074* "
II	"	(*a*)	0.15 "
		(*b*)	0.12 "

ASSAY OF EXTRACTS.

A. Solid Extracts.

Process 1 (applicable only to extract of belladonna leaves and root): Weigh off in a small beaker glass 2 to

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* For this the following mixture was employed in all my work, save where otherwise noted:

Conc. ammonia water (30 per cent.)	10 c. c.
Alcohol	70 c. c.
Ether	920 c. c.

*By Beckurts' method.

3 grammes of extract, and work this up *thoroughly* with 8 c. c. of dil. sulphuric acid (2.5 per cent.), using a small spatula for the purpose. A platinum wire will answer admirably if about two millimeters thick and beaten flat at both ends. The acid aqueous solution is then filtered into the apparatus, the separated chlorophyll etc. remaining on the filter. Beaker glass and filter are rinsed with a little water; wash the acid solution for one to two hours with water; then add 4 to 5 c. c. of dil. ammonia water (5 per cent.), and extract for three hours. Proceed further in the manner prescribed for the drug. The alkaloids thus obtained are still slightly colored, but the coloration is so faint that it nowise affects the titration. If an almost colorless alkaloidal solution be desired, proceed as follows:

Process 2: Dissolve 3 to 4 grammes of extract (with henbane take 6 to 8 grammes) in a little dil. alcohol (75 per cent.). Add this solution in several portions to a corresponding quantity of oakwood sawdust,[*] and evaporate the alcohol under gentle heat. Then digest the dry mixture several hours, shaking frequently (it is best to use the agitating apparatus), with 150 or 200 c. c. of diluted Prollius mixture, according to the quantity of sawdust employed. Now filter off 100 c. c. (corresponding to two-thirds and one-half respectively of the quantity of extract taken), unite this in a shallow glass vessel with 8 c. c. of water, 2 to 3 c. c. of dil. sulphuric acid (2.5 per cent.) and proceed in the manner previously stated.

EXTRACT BELLADONNA LEAVES.

I	found	(*a*) 2.13	per cent.
		(*b*) 2.20	"
II	"	(*a*) 1.68	"
		(*b*) 1.72	"
III	"	(*a*) 1.90	"
		(*b*) 1.85	"

EXTRACT HYOSCYAMUS.

I	found	(*a*) 0.36	per cent.
		(*b*) 0.32	"
		(*c*) 0.32[†]	"
II	found	(*a*) 0.65	per cent.
		(*b*) 0.64	"

EXTRACT BELLADONNA ROOT.

I	found	(*a*) 2.04	per cent.
		(*b*) 2.00	"
		(*c*) 1.98[‡]	"

B. Fluid Extracts.

Process 1 (not applicable to fluid extract stramonium seed and hyoscyamus leaves): 10 c.c. of the fluid extract are placed in a small beaker glass and warmed gently until the alcohol is evaporated. In this case, for dispelling the alcohol, I employ the vacuum desiccator without application of heat, permitting the extract to remain in the desiccator over night. The residue obtained is treated in the manner indicated for the solid extract.

Process 2: 20 c.c. fluid extract (with hyoscyamus 40 c.c.) are added to a corresponding quantity of sawdust. Dry the mixture; digest several hours with 100 and 200 c.c. respectively of Prollius mixture, shaking frequently; and then treat in the regular manner 50 and 100 c.c. respectively of the ethereal solution (corresponding to 10 and 20 c.c. respectively of the fluid extract).

FLUID EXTRACT BELLADONNA LEAVES.

I	found	(*a*) 0.49	per cent.
		(*b*) 0.44	"
II	"	(*a*) 0.35	"
		(*b*) 0.36	"
		(*c*) 0.36[*]	"

FLUID EXTRACT STRAMONIUM LEAVES.

I	found	(*a*) 0.37	per cent.
		(*b*) 0.38	"
II	"	(*a*) 0.34	"
		(*b*) 0.34	"

FLUID EXTRACT BELLADONNA ROOT.

I	found	(*a*) 0.45	per cent.
		(*b*) 0.43	"
II	"	(*a*) 0.54	"
		(*b*) 0.54	"
		(*c*) 0.50[*]	"

FLUID EXTRACT STRAMONIUM SEED.

I	found	(*a*) 0.32	per cent.
		(*b*) 0.32	"
II	"	(*a*) 0.30	"
		(*b*) 0.29	"

FLUID EXTRACT HYSOCYAMUS LEAVES.

I	found	(*a*) 0.104	per cent.
		(*b*) 0.110	"
II	"	(*a*) 0.095	"
		(*b*) 0.092	"

CINCHONA BARK; NUX-VOMICA SEED.

With respect to the assay of these two drugs and their extracts, I would simply refer to the original article of Van Ledden Hulsebosch,[†] and remark that I prolong the perforation not only two but three hours, also employing dil. caustic soda for separating the alkaloids from the acid solution. The method yields us here very good results.

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[*] F. A. Thompson. Proceedings of the Michigan State Pharmaceutical Association, 1891, p. 67, and *Rundschau*, 1892, p. 239.

[†] By Beckurts' method.

[‡] Result "*c*" was obtained as follows with Dieterich's method: 3.7579 grammes of extract were dissolved in water and this solution reduced to 30 c. c.; after deposition, I filtered; condensed 20 c. c. of the filtrate (=2.5052 grammes of extract) in a vacuum desiccator over sulphuric acid until sufficiently concentrated, and treated further with calcium oxide in the familiar manner.

[*] By Dieterich's method.

[†] *Pharm. Rundschau*, 1893, pp. 83 and 186.

COCA LEAVES.

Digest in the "agitator" for about twelve hours, 12 grammes moderately fine powder of coca leaves with 95 c.c. of benzene, 1 c.c. of ammonia (30 per cent.), and 4 c.c. of alcohol. Then permit to deposit, filter through cotton 50 c.c. (= 6 grammes of drug); place the filtrate in a shallow glass vessel; add 2 c. c. of dil. sulphuric acid (2.5 per cent.) and 8 c. c. of water; evaporate alcohol and benzene under moderate heat, and filter the acid solution into the perforator. This solution is next washed for an hour with ether, and then, after adding 4 to 5 c.c. of dil. ammonia, is extracted three hours with ether. After evaporation of the ether, the alkaloid is determined by titration; and 1 c.c. of $\frac{N}{100}$ sulphuric acid was taken as the equivalent of 0.00303 gramme of alkaloid. Two drugs thus examined yielded the following results:

I	found	(a) 0.43	per cent.
		(b) 0.45	"
II	"	(a) 0.65	"
		(b) 0.62	"

For assaying the extracts of coca leaves, proceed as with belladonna leaves, but here the drying of the extract with sawdust and its extraction with the above given benzene mixture is to be preferred. Three fluid extracts yielded the following values:

I	found	(a) 0.47	per cent.
		(b) 0.49	"
II	"	(a) 0.61	"
		(b) 0.59	"
III	"	(a) 0.52	"
		(b) 0.50	"
		(c) 0.50*	"

COLCHICUM ROOT AND SEED.

Twenty grammes of drug rather finely powdered are consigned to the "agitator" for twelve hours with 120 c.c. of a chloroform-Prollius mixture of the following composition: 1 c.c. ammonia-water (30 per cent.), 5 c.c. alcohol, 24 c.c. chloroform, 70 c.c. ether. Permit to deposit, filter off 50 c.c. (= 10 grammes of drug), add this to 8 c.c. of water, and pour in acetic acid until an acid reaction is obtained. Alcohol and ether are then evaporated under moderate heat; filter the acid solution through cotton into the perforator, and wash the solution for an hour with *petroleum-ether*. Then remove the petroleum ether over the alkaloidal solution as completely as may be by carefully inclining the apparatus; add carbonate of sodium until a pronounced alkaline reaction is obtained, and extract the alkaloids with a mixture of 25 parts of chloroform and 75 parts of ether. In employing this chloroform-ether mixture, however, it becomes necessary to place in the perforator, at the mouth of the tube C, at B, a small layer of clean cotton, in order to prevent the bubbles, which may ascend from the extract solution, from gaining access to the flask. After evaporation of the ether and chloroform and drying of the alkaloids at a temperature not exceeding 100° C., the latter are determined by weight.

COLCHICUM ROOT.

I	found	(a) 0.45	per cent.
		(b) 0.50	"
II	"	(a) 0.53	"
		(b) 0.49	"

COLCHICUM SEED.

I	found	(a) 0.60	per cent.
		(b) 0.57	"
II	"	(a) 0.43	"
		(b) 0.46	"

For assaying the fluid extract I proceed as with fluid extract belladonna in Method 1, with the difference that the washing is performed with petroleum ether, the alkaloids separated out with carbonate of sodium and extracted with chloroform-ether.

CONIUM FRUIT.

Ten grammes of drug are digested for twelve hours with 100 c.c. of dilute Prollius mixture in the "agitator;" 50 c.c. (= 5 grammes of drug) are then filtered off and added to 8 c.c. of water and 2 to 3 c.c. of dilute sulphuric acid (2.5 per cent.). After the evaporation of alcohol and ether, the acid solution is filtered into the perforator, then washed for an hour with ether. Sodium carbonate is added until an alkaline reaction ensues; then extract for three hours with ether. To the alkaloidal solution thus obtained, 10 c.c. of $\frac{N}{10}$ sulphuric acid is added, permitting the ether to evaporate at ordinary temperature. The excess of acid is then titrated with $\frac{N}{100}$ caustic soda.

One cubic centimeter of $\frac{N}{100}$-acid was taken as the equivalent of 0.00172 gramme of alkaloid.

I	found	(a) 0.65	per cent.
		(b) 0.62	"
II	"	(a) 0.75	"
		(b) 0.73	"

GELSEMIUM ROOT.

Digest in the agitator 20 grammes of powdered drug with 100 c.c. of dilute Prollius mixture during twelve hours; filter off 50 c.c. (= 10 grammes of drug); add 8 c.c. of water, 2 to 3 c.c. of dilute sulphuric acid (2.5 per cent.), and permit the alcohol and ether to evaporate under moderate temperature. The acid solution is filtered through cotton into the perforator, and here first washed for an hour with petroleum-ether on account of the solubility of the alkaloidal sulphate. After the layer of petroleum-ether resting upon the alkaloidal solution has been poured off as far as possible by careful inclination of the apparatus, add 5 c.c. of dilute ammonia water (5 per cent.), and extract the alkaloids for three hours with ether. After careful drying, the alkaloids are weighed. A slight admixture of gelsemic acid always imparts to the alkaloids thus obtained a slight fluorescence.

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*By Dieterich's method.

I	found	(a)	0.40 per cent.
		(b)	0.42 "
II	"	(a)	0.45 "
		(b)	0.48 "

The fluid extract is similarly treated after dispelling the alcohol.

RHIZOMA HYDRASTIS CANADENSIS.

For the assay of this drug I follow in the main the method indicated by F. A. Thompson.*

Twenty grammes of powdered drug are exhausted with alcohol (94 per cent.) through hot repercolation. After cooling, the alcoholic solution is brought up to 100 c.c. and filtered. Separation of the berberine is first effected, by mixing 25 c.c. of the filtrate with 2.5 c.c. of concentrated hydrochloric acid, 0.5 c.c. concentrated sulphuric acid, and 12.5 c.c. ether. I would here remark that better and more uniform results are obtained when the separation is effected not only in a cool place, but also in ice. In this way, also, the separation ensues completely within a few hours. The filtrate of the hydrochlorate of berberine is mixed with concentrated ammonia-water (30 per cent.) *cautiously until a faintly acid reaction* ensues, then filtered off from the deposited ammonium salts with cotton, and the faintly acid hydrastine solution introduced in two or three portions into a corresponding quantity of sawdust. After drying the sawdust at moderate heat, it is digested for several hours in the agitator with 20 c.c. of dilute Prollius mixture; then filter off 100 c.c. (= 2.5 grammes); add 8 c.c. of water and 2 to 3 c.c. of dilute sulphuric acid (2.5 per cent.), permitting ether and alcohol to evaporate. The acid alkaloidal solution is now filtered into the perforator, washed for an hour with ether, and after adding 5 c.c. dilute ammonia water (5 per cent.) the hydrastine deposited—almost snowy white—is extracted for three hours with ether. The ethereal alkaloidal solution is evaporated to dryness, the alkaloid dissolved in 10 c.c. $\frac{N}{10}$-sulphuric acid, and the excess of acid titrated with sodium.

One cubic centimeter $\frac{N}{100}$-acid was taken as the equivalent of 0.00383 gramme of alkaloid.

			BERBERINE.	HYDRASTINE.
Test I	found	(a)	3.28 per cent.	2.06 per cent.
	"	(b)	3.30 "	2.05 "
	"	(c)	3.29 "	2.05 "
Test II	found	(a)	3.66 "	2.15 "
	"	(b)	3.64 "	2.20 "
	"	(c)	3.62 "	2.18 "

For the determination of solid extract *Hydrastis canadensis*, about 10 grammes of extract are warmed for a short time with 94-per-cent. alcohol in a reflux condenser; after cooling, the solution is filtered, brought up to 100 c. c., and 25 c. c. of this treated in the manner described above.

With fluid extract of golden seal, take 20 c. c., combining this with about 80 c. c. alcohol, warm gently, cool, bring up the whole quantity of liquid to 100 c. c., filter, and treat 25 c. c. of the filtrate in the same manner.

IPECAC ROOT; QUEBRACHO BARK.

Four grammes of finely powdered drug (10 grammes of quebracho) are agitated in the shaking apparatus with 100 c. c. of dil. Prollius mixture for twelve hours; 50 c. c. (=2 grammes and 5 grammes respectively of drug) are then filtered off, 8 c. c. water and 2 c. c. dil. sulphuric acid (2.5 per cent.) added, and the alcohol with the ether dissipated by gently warming.

The acid alkaloidal solution is filtered through cotton into the perforator, washed a full hour with ether, and, after adding 5 c. c. of dil. ammonia water (5 per cent.), extracted for three hours with ether. The ethereal alkaloidal solution is dried. With quebracho the alkaloids are determined by weight, whereas with ipecac the emetine obtained is dissolved in 10 c. c. of $\frac{N}{10}$ sulphuric acid, titrating the excess of acid with $\frac{N}{100}$ caustic soda. One cubic centimeter $\frac{N}{100}$ acid was taken as the equivalent of 0.00254 gramme emetine.

IPECAC ROOT.

I	found	(a)	2.60 per cent.
		(b)	2.56 "
		(c)	2.50* "
II	"	(a)	2.25 "
		(b)	2.18 "
		(c)	2.17* "

QUEBRACHO BARK.

I	found	(a)	1.35 per cent.
		(b)	1.42 "
II	"	(a)	1.58 "
		(b)	1.50 "

For the determination of solid extract ipecac take about 0.5 gramme (quebracho, 1.0 gramme), dissolve the extract in 8 c. c. of water, adding 2 c. c. of dil. sulphuric acid (2.5 per cent.); filter through cotton into the perforator, and proceed as above. In dealing with the fluid extracts, take 2 c. c. of the ipecac product, 5 c. c. of the quebracho preparation, but first dispel the alcohol by gently warming the solution.

It is my purpose to include further drugs within the scope of my investigation. The results will be reported later on to this journal.

Analytical Laboratory of Parke, Davis & Co.,
Detroit, November, 1893.

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* Bulletin of Pharmacy, 1893, p. 305.

*By Dragendorff's method.

WHY PHYSICIANS DISPENSE THEIR OWN MEDICINES.

BY FAX FOX, M.D.

"Audi alteram partem."

Of late considerable has been written upon this subject in the columns of journals devoted to the interests of the pharmacists, hence I infer that the practice must be increasing; and perhaps it might be well to ascertain the cause of it before prescribing a remedy, if we are to count upon a salutary reform.

My own facilities for learning the inside facts *upon both sides* have been considerable and, perhaps, exceptional. From the time I entered one of the larger and better-conducted metropolitan pharmacies as "boy," in 1856, until the present day I have been more or less connected with the drug business, as apprentice, junior, senior, and manager. The greater part of my time since 1871 has been devoted to the practice of medicine, sometimes in cities, sometimes in country locations where there were no drug stores, and again in places where there were several. Such an experience may well be presumed to have imparted an ability to grasp both aspects of the dispensing problem.

Personally I have long cherished a decided objection to keeping a pharmacy, on the ground that it is a sort of vermiform appendix to my other business—little, but troublesome.

It ties up considerable money that might be used advantageously in other quarters.

It occupies much time and space that I should prefer to devote to other purposes, and if the practitioner is even moderately busy the services of a special assistant are required.

It is a rather "messy" business, that does not properly belong to the profession, and is apt to keep the office and person of the physician in an untidy and ill-smelling condition; and, considered as an investment, *most emphatically* does not pay. In many ways it is both inconvenient and unprofitable.

I have been in my present location for about six years. Before removing here I had a large and expensive stock of drugs, as a physician who has been bred a druggist will naturally purchase better drugs and larger quantities of them than the doctor who has not had that preliminary training.

I disposed of my stock with the determination never to keep another drug on the premises, excepting such as were necessary for my own family use or to keep my bag replenished. As there were two good drug stores here, I hoped to be able to get along without this incubus. *To-day I have a larger and more complete stock of drugs on hand than ever before,* having been forced in self-defense to make the investment.

In stating my reasons for having resumed a practice that is so distateful to me, I trust that I may not be considered an egotist, a pessimist, or a "growler;" I merely speak of things as I have found them, striving to make myself clearly understood.

When I came here I gave such special formulas as I was in the habit of using to *both* druggists, with such particular directions for compounding them as years of experience had proved to be the best. Despite this I soon found that the preparations they furnished were not the same as I had made: they had neither the same appearance nor the same properties. One formula I withheld, since its compounding demanded special skill and nice manipulation. I eventually made arrangements with one of the druggists by which he was to furnish the principal ingredient and I was to prepare it for him, stipulating that he sell it at the same price I had charged, viz., 25 cents per ounce. I fulfilled my part of the agreement at a loss. In a short time I found that he was selling it for 20 cents, thereby creating the impression that I had been previously overcharging for it, and that I was paying him for his present agency by gratuitous labor and a bonus of 5 cents per ounce!

Frequently I have had occasion to prescribe something to meet an immediate necessity, intending to change the treatment in a few days, for reasons that any physician can readily understand. These prescriptions have been renewed by the druggist without my knowledge or approval. I did not so much mind the loss of the consultation fee in these cases—though that was *something*—but my patient was thus encouraged in using a medicine not suited to his condition at that time. The consequence was that he received no benefit—perhaps became worse—and I incurred blame and loss of reputation. The parsimony of the patient, who dreaded paying the meagre consultation fee of *50 cents* (I am almost ashamed to write it), was encouraged by the cupidity of the druggist who feared that the new prescription might perchance go to his rival.

I have given a prescription to A., which benefited him. B., going soon after to the druggist who compounded it, and describing his symptoms, was told that A. "*was taken just the same way*," and that I had given something which cured him. Thereupon the druggist gives B. a compound such as I had prescribed for A.

Flattering to me, *perhaps*, but not very remunerative, and scarcely honest. When the medicine failed to relieve B., *I* generally received the blame—*because I had prescribed the medicine originally.*

I have known a prescription that I have written for A. go the rounds of a dozen families and be prepared for them, without consulting me, *even when it contained morphia* or some other potent drug that I would not wish to use constantly for any length of time.

I have known one of the druggists, who had practiced medicine, criticise every prescription that I sent to him, and labor to convince my patient that the medicine ordered was not suited to his case, and that *he* could have done *so much better!* The sending of a prescription to one of the *gentlemen* usually resulted in my patient's going elsewhere for subsequent treatment.

To these reasons may be added: The pharmacists here have no night service, as both the proprietors and their clerks reside at some distance from their stores. There is so much gossiping connected with one store that the purchase of any article of a delicate nature soon becomes bruited abroad. In both stores the prescription files are permitted to be inspected by favored physicians—and they are even informed for whom I had written certain prescriptions.

This is my own case—every statement of which I know to be a *fact*, either from personal knowledge or from reliable authority.

Although I lay no claim to an angelic disposition, I have always tried to treat the druggists as I wished to be treated myself when in that business—as I well understand, and can readily sympathize with, their troubles and trials. Any knowledge of medicine or pharmacy that I possessed has always been at their service; and in one case, where the proprietor commanded neither pharmaceutical skill nor the confidence of the people, I have given him all my leisure moments for a week at a time, to the neglect of my office business, for the purpose of helping him keep his trade while his clerk was away on a periodical spree.

If I had been the worst fellow that ever disgraced his M.D., no *honest* druggist would have pursued such a course as I have described. And when I claim that *I have been forced to dispense my own medicines in self-defense*, I trust that my claim may be allowed as just and reasonable.

It may be urged that the practices I have mentioned are confined to this locality. I doubt it. From my knowledge of the drug business some twenty years ago I am quite convinced that similar practices were the rule, rather than the exception, from Augusta, Me., to Buffalo, N. Y., and the old "knights of the mortar and pestle" assure me that the craft has degenerated rather than improved.

Be this as it may, at the present day I know of pharmacies (Heaven save the mark!) which are doing a thriving business in populous localities, and in which *aqua destillata* is an unknown quantity and a c. p. salt a *rara avis;* in which the prescription powder-papers are still cut from the shop wrapping-paper with a spatula; where the rule is *never to let a prescription go*—if the article called for is not in stock, *put in something;* and where prescriptions are filled with the *cheapest* preparations in the market, and *commercial* salts are invariably used instead of the chemically pure!

I know drug stores where clerks are employed with explicit instructions *to do all the counter practice possible*, because it "*attracts business;*" and to use every effort to "head off" the practice of those physicians who do not favor the store. I know of clerks holding situations and receiving part of their salary from some local physician for this very purpose.

I know of one *proprietor* of a large and thriving store who put up spir. ether. nitros. when *ether* was called for, and when he received a prescription written "*Fill this bottle with balsam of fir,*" sent out Kennedy's Extract of Pinus Canadensis, and *did not know the difference.*

I know of another proprietor—an M.D. and registered as a pharmacist in the State of New York—who contended that water containing 2 per cent. of common salt was better than distilled water for *all* pharmaceutical purposes, and when I suggested that the distilled water *might* be preferred for making solutions of nitrate of silver, could not understand the wherefore. I might cite many more such instances, but these will no doubt suffice.

The druggists have taken away from the physicians the greater part of the practice in venereal diseases—not generally to the benefit of the patients, as those who make a specialty of treating stricture and other sequelæ could readily show.

If we complained about this, we were told that "they didn't know we had gone into *that* business"—or else we were thought grasping and greedy. And if we said anything against their pushing the sale of nostrums, the answer was that "they bought them to sell."

I know that there are many men in the *profession* of pharmacy who are an honor to it—men of undoubted skill, unblemished reputation, and unimpeachable integrity, to whom such practices as I have cited would be impossible. With these gentlemen the physicians have always been on the most amicable terms, as we recognize their worth. They work hand in hand with us to elevate the two professions, for our common benefit, and *for the good of the public.* These gentlemen are unfortunately too few. *They* know the truth of much that I have stated.

When we complained of these practices, we were met with some flimsy excuse or with derision. Perhaps the offenders were courteous enough *not* to laugh in our faces, and denied all knowledge of the objectionable practices, promising an immediate discontinuance; but they still persisted in the same old courses because they thought it *paid.* *Now*, when the shadow is beginning to fall upon them, and it does not pay as well as it did, they feel less like laughing. We were often asked "what we were going to do about it." It seems as if some of them were finding out.

If we became disgusted with the rascality of Pestle and sent our patients to Mortar, then Pestle tried to convince them that they were being swindled by Mortar and *we* were receiving part of the proceeds.

We have had recourse to every means within our reach, and, finding them all powerless to stop the practices we so strongly resent, many of us have been *driven* to dispensing our own medicines, and *more to follow the example.*

It has been said that our brothers the homœopaths have done much toward making the dispensing of medicines popular. Undoubtedly they have done something in that direction; so have our foster-brothers, the quacks.

We have learned something from both of them—particularly that the more intimate the relation between the physician and his patient, the better for both.

We preferred to keep up this intimacy in a strictly professional manner. The busy practitioner can ill spare time to stand on the street corners nodding, like a crockery Mandarin, to each passer-by, and making solicitous inquiries after the health of every one whom he has treated during the past year or hopes to treat during the coming twelvemonth. Possibly we would not do this if we *had* the time, for many of us consider that such acts bear too strong a resemblance to those of a professional courtesan striving to maintain the integrity of her *clientèle.*

I believe that a physician should be affable, approachable, courteous, sympathetic, and not *too* dignified; but he can be all this and not kneel in the dirt, nor in any way degrade himself or his honorable profession, the dignity of which he should feel compelled to maintain for the sake of the reputable men who are in its ranks.

To those who resent the foregoing as the jeremiad of an old fogy—not *fin de siècle,* and all that—I have but to say that there should be some aim for the physician higher than money-getting, and that *no* conditions however pressing should justify his permitting the prostitution of himself or his profession for material ends.

We hoped that the druggists would assist us in perfecting this desired intimacy with our patients; if they decline to do so, we must do it ourselves in order to keep our practice, for many of us have no other means of support.

Speaking from long experience, I fully believe that of one hundred physicians who dispense their own medicines (our brothers and foster-brothers not counted), ninety-five of them would prefer to do otherwise if they felt that they could discontinue the practice without being made to suffer.

Lack of the necessary skill in pharmacy has prevented many from preparing the medicines for their patients, but this need not remain an obstacle much longer. Some of us old fellows know a little of pharmacy; the young men can learn, and until they do they will find no dearth of means for filling the temporary gap.

For a time this may cause some of us to fall into a system of routine, forcing the case to fit the medicine at hand. A method that does not benefit the druggist, rarely helps the patient, and is anything but a pleasure to the honest practitioner.

There is one fact worthy of the druggist's consideration. The majority of the people (*all* classes being included in the enumeration) would much prefer to procure their medicines from the physician who prescribes them. When they tried to urge this upon us, we strove to educate them into a different belief—although we knew we were often driving away practice by so doing.

The people certainly have more confidence in the medicines procured from their physician, and it is often a great convenience to them.

Perhaps their confidence is not misplaced, for the pharmacist naturally looks at the commercial aspect of the transaction, while the physician is more interested in assuring his patient benefit from the medicine than in deriving a substantial profit from its sale.

I have nothing to say against the high prices charged by druggists; I believe that the laborer is worthy of his hire, and I know the expenses he has to meet—rent, clerk hire, etc.—as well as the losses caused by carrying a full line of goods, a large fraction of which soon becomes dead stock.

Looking back upon an experience of twenty-seven years, and viewing the matter dispassionately, on both sides and in its various lights, I am compelled to say that, as a whole, the physicians have given the druggists better and more honorable treatment than they have received in return. The time has come when necessity demands that we stand and defend ourselves or perish. Can they blame us?

While *we* were the sufferers we did not hear *them* complain. Now, if the consequences of their own acts are unpleasantly brought home, can they wonder that we do not listen to *their* complaints—that we are not ready with our sympathy and assistance? They ask us, as it were, to disarm and maintain a peaceful attitude. Gladly would we do so, but experience has taught us the folly of such a course. We should thus only invite further attacks along the same lines. We have decided that it is better to maintain a disastrous war than to live under a cringing and dishonorable peace. We *desire* peace. We expect to have it *ultimately,* but we expect to fight hard for it.

CHEMISTRY.

MELTING-POINT OF COCAINE SALTS.

BY JOHN M. FRANCIS.

In a previous number of the BULLETIN OF PHARMACY I stated that the lack of agreement in the melting-points of certain of the alkaloids, as demonstrated by the published reports of others and by my own experience, had led me to doubt the advisability of ascribing to them a *melting-point* in the strictest acceptance of the term. As evidence of this I have selected the muriate of cocaine as the basis for four series of experiments.

A reference to the various authorities on pharmaceutical subjects proves that we have a latitude of over 20° C. in which to locate our melting-point of any sample of this salt; it being variously placed at from 180° C. to 202° C.

This in itself is sufficient to arouse suspicion; how are we to explain it? Are we to suppose that the experimenters have been working with impure preparations, or that they do not determine the melting-point properly, or that the lack of uniformity is produced by different manipulation?

As stated in my previous article, I believe that all these degrees of melting may be obtained from the same sample of cocaine muriate by merely varying the degree of heat applied, or the length of time in which the alkaloid is subjected to its action. I have never been able by any means of purification to obtain a sample of this salt which had a melting-point as high as 200° C. under any circumstances, but I think it possible that a cocaine muriate might be obtained so free from any trace of impurity that by proper manipulation it would not melt below 200° C.

In the two following series of experiments two different samples of cocaine muriate, called "A" and "B" respectively, were used. Six *separate* portions of the same sample were used in each series, and of these portions No. 1 in both series was desiccated over strong sulphuric acid for forty-eight hours; Nos. 2, 3, 4, 5, and 6, in the order named, were desiccated in an air-bath at a constant temperature of 103° C. for periods of one, two, three, four, and five hours respectively.

After drying, the sample was cooled in a desiccator, transferred to the apparatus, and the melting-point determined as usual. With the exception of the preliminary drying, the conditions in all instances were made as nearly identical as possible.

A.

No.	Melting-point.
1	173° C.
2	175° C.
3	183° C.
4	168° C.
5	166° C.
6	163° C.

B.

No.	Melting-point.
1	162° C.
2	174° C.
3	186° C.
4	174° C.
5	167° C.
6	162° C.

It would seem from the above experiments that the salts contained a small amount of the original solvent, which required a desiccation of more than one hour to remove, and that after this had disappeared the effects of incipient decomposition begin to manifest themselves.

In the following two series of experiments, two different samples, called "C" and "D," were used. The conditions under which the melting-points were determined were as nearly identical as possible in all instances, except that the time during which the temperature of the apparatus was raised from 22° C. to the melting-point of the sample was increased in each succeeding experiment:

C.

No.	Time: Minutes.	Melting-point.
1	22	191° C.
2	28	184° C.
3	33	182° C.
4	37	180° C.
5	47	178° C.
6	53	177° C.
7	60	176° C.

D.

No.	Time: Minutes.	Melting-point.
1	15	192° C.
2	28	184° C.
3	34	182° C.
4	37	178° C.
5	40	176° C.
6	48	174° C.
7	53	171° C.
8	60	169° C.

It would seem to the writer that the obvious conclusion to be drawn from the above results is, that cocaine muriate is easily decomposable by heat, and that this decomposition sets in before the melting temperature is reached, and that therefore this salt does not have a *melting*-point, but rather a *decomposition*-point, which varies greatly according to conditions.

The pertinence of the above is made evident by reference to the U. S. Pharmacopœia (1890), in which the melting-point of cocaine muriate is placed at 193° C.—a stipulation which if enforced would lead to great confusion because of the variety of results obtained by different persons whose methods or manipulation might differ only in slight degree.

Furthermore, is it not feasible to explain the lack of certainty (concerning the melting-point) of many of the other alkaloidal salts by the same theory?

The experiments cited above are somewhat expansive both as to time and as to the degree of heat applied in some instances, but they serve to show more vividly the possible effects of both as causes of variation. In these experiments I have employed a "Schultze-Anschutz" apparatus which has always proved very satisfactory.

Pharmaceutical Laboratory, Parke, Davis & Co.,
Detroit, November, 1893.

BOTANY AND MATERIA MEDICA.

POISONOUS PLANTS AND THEIR POISONS.

BY J. GUARDIA, F.R.M.S.

The toxic properties of plants are due to certain substances contained in them, most of which have already been studied and extracted by chemists. These substances are generally of an alkaline nature, and called *alkaloids;* some are acid; some are glucosides. Among the best known of the alkaloids I may name morphine, codeine, strychnine, aconitine, nicotine, coniine, atropine, and hyoscyamine.

The first natural order, that of the RANUNCULACEÆ, is a very poisonous one, almost all of its members possessing more or less strong acrid or narcotic-acrid properties.

Anemone Pulsatilla; A. nemorosa.—The pasque-flower and wood anemone contain an acrid alkaloid, anemonine, which acts chiefly as a caustic by inflaming and blistering the skin. One and one-half ounces of the fresh juice of *A. Pulsatilla* introduced into the stomach of a dog caused its death after six hours. *A. nemorosa* is not as strong in its effects.

Ranunculus.—Most of our buttercups contain an irritant substance, which is strongest in *R. acris.* Three ounces of the juice of *R. arvensis* killed a dog in four minutes. The juice is so caustic that the hands of children sometimes are inflamed and blistered by grasping the bruised stems in hot weather. Beggars are said to employ them to ulcerate their feet and legs for the purpose of exciting compassion. *R. aquatilis* is destitute of this acrid principle, and the others lose it if completely desiccated.

Helleborus fœtidis and *H. viridis* contain a fatty oil which is a narcotic irritant. Two dessertspoonfuls of the infusion of *H. fœtidis* killed a child in thirteen hours. A decoction of ½ drachm of the root of *H. niger* killed a strong horse in ten minutes,† and even its pollen is believed to be poisonous.

Delphinium Ajacis and *D. Staphisagria.*—The larkspurs produce an acrid alkaloid, delphinine. This is present in the leaves and stems, and in great quantity in the seeds, which are very poisonous.

Aconitum Napellus.—The pretty monkshood, so often grown in our gardens, is a most dangerous plant. Every part of it is full of a narcotic-acrid alkaloid, aconitine, of a very deadly nature. When taken it produces a feeling of great constriction in the throat, sometimes amounting to choking, and even a small dose often leads to death. The juice of *A. ferox* is so violent that it is used in India for poisoning the arrows of tiger-traps, etc.

PAPAVERACEÆ.—*Papaver somniferum*, etc.—The thick, milky fluid that oozes from the stem of a poppy when cut is powerfully narcotic, and furnishes the opium of commerce. Opium is obtained from incisions made in the unripe seed vessel of the oriental plant. It contains several poisonous alkaloids, viz., morphine, narcotine, meconine, thebaine, etc., and its effects have been often described. It acts as a poison on all animals, and even on some plants. In small doses it excites all the physical functions and increases the activity of the brain. The dose required to poison varies very much with the person and habit, and, of course, opium-smokers can absorb a quantity of the poison which to us would prove dangerous. All other poppies have juices similar in nature but far less powerful in effect. The odor of the common red poppy, *P. Rhœas*, has a well known, nauseous, stupefying effect.

Chelidonium majus.—The celandine has a violently acrid, orange-colored juice. Its repulsive odor is, perhaps, the cause that cases of persons being poisoned by this plant are very rare. The juice is said to cure warts and corns.

LEGUMINOSÆ.—This order of plants, which gives us our peas and beans, the clovers and vetches, besides logwood, gum arabic, balsam of Tolu, and many other useful products, also contains some very poisonous plants. And although most of the European species are devoid of any powerful prejudicial action, in some others the presence, in greater or lesser quantity, of a principle called cystine, renders them not only unwholesome, but, in certain cases, decidedly poisonous. The seeds of the beautiful *Laburnum* of our gardens, for instance, are considered highly toxic, and those of the yellow vetch, *Lathyrus aphaca*, are said to be unwholesome. *L. sativus* causes, if eaten, a strong rigidity of the limbs, and these, in some cases, become perfectly helpless. It seems to have a similar effect on some animals. The root of the kidney bean is also said to be dangerously narcotic. Among the principal exotic poisonous species of this order may be mentioned *Physostigma venenosum*, the seeds of which are known as the ordeal beans of Old Calabar; the bark and red juice of *Erythrophlœum Guineense* are also used as an ordeal in West Africa. The seeds of *Abrus precatorius*, a plant considerably talked about lately on account of its supposed meteorological propensities, are known as crabs' eyes. They are very poisonous; half a seed (a whole seed weighs about 1½ grains) rubbed down with a little water and injected into the thigh of a cat, will produce fatal effects within twenty-four hours. The roots, on the other hand, are known on the Continent as American liquorice. The plant is a common one in the East and West Indies. Several species of *Derris* in the East Indies, and a *Piscidia* of Jamaica, are used to poison fish. No less than one hundred and fifty species of flowering plants are poisonous to fish, as Dr. Radlkofer has shown, and many of these are actually used for fishing purposes. As an illustration of this interesting action of the poisons of some plants, I may here give Bates's description of the way in which a poisonous liana, called Timbó, is used on the river Amazons:

"It will act only in the still waters of creeks and pools. A few rods, a yard in length, are mashed and soaked in the water, which quickly becomes discolored with the milky, deleterious juice of the plant. In about half an hour all the smaller fishes, over a rather wide space around the spot, rise to the surface, floating on their sides, and with gills wide open. The poison acts, evidently, by suffocating the fishes. It spreads slowly in the water, and a very slight mixture seems sufficient to stupefy them. I was surprised on beating the water in places where no fishes were visible in the clear depths, for many yards around, to find sooner or later, sometimes twenty-four hours afterward, a considerable number floating on the surface." Fish killed in this manner form perfectly wholesome food.

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† Twenty grains may be safely given, however, to the human adult as a hydragogue cathartic.—ED.

The ROSACEÆ, to which belong the useful trees that yield our cherries, plums, almonds, peaches, apples, and pears, yet likewise produce one of the most deadly of narcotic poisons, *i.e.*, hydrocyanic or prussic acid. It is present in most members of the order, but principally in the almond tree, the laurelin the kernels, of all stone fruit, and in the leaves and flowers of the cherry, plum, peach, etc. The oil of bitter almonds is extremely poisonous, and even the exhalation of the leaves of the common laurel is destructive to insect life, as all entomologists know. Cases of children being poisoned through eating the kernels of cherries are on record. Prussic acid in its pure state kills almost instantaneously, be it inhaled or otherwise admitted into the system. It acts as a powerful poison on all animal organisms without exception.

CUCURBITACEÆ.—Another large and important order, which includes the melon, cucumber, gourd, vegetable marrow, etc. *Bryonia dioica* and *B. alba*, white bryony, are familiar representatives of this order. Their large rootstock has a nauseous, milky juice of intensely acrid and cathartic properties. The bitter substance, bryonin, derived from them, though much used in medicine, can, when taken in large doses, cause convulsions, stupor, and even death.

Ecballium Elaterium, of the south of Europe, etc., produces an acrid juice in its fruit, from which is prepared the substance known as elaterium. When a fruit of this plant is ripe it suddenly drops to the ground, and through the hole left by the stalk its poisonous juice (which carries with it the seeds) is squirted out with considerable force. This has gained for the plant the name squirting cucumber.

UMBELLIFERÆ.—*Conium maculatum.*—The hemlock contains an active principle named conia or coniine, which is highly toxic even in small quantities. It speedily kills most animals, but it is said that the plant is eaten by sheep with impunity. Conia acts on the nervous system and produces paralysis of the extremities before death, and this has been known to take place, in some instances, within an hour after the poison was taken. The juice of *C. maculatum*, probably mixed with opium, was given by the Athenians to citizens condemned to death, as in the case of Socrates and Phocion.

Cicuta virosa.—The water hemlock or cowbane is still more poisonous than *Conium*. It contains in its sap a volatile alkaloid, cicutine, which is fatal to cattle and man, but is said to have no dangerous effect on horses or dogs. The poison does not seem to develop till the summer months, as cows, it is stated, can eat the plant with impunity in the spring.

Œnanthe fistulosa, *Œ. crocata*, and *Œ. phellandrium.*—The water dropworts are perhaps the most virulent of umbelliferous plants, and the resemblance of the roots of *Œ. crocata* to parsnips, of the leaves of the same and of *Œ. phellandrium* to parsley, and of their shoots generally to celery, has led to disastrous results, by their being eaten by cattle and even children.

Æthusa cynapium.—The fool's parsley is another one of the poisonous umbellifers. Its odor is nauseous, and the plant, when eaten, has been known to give the "lock-jaw," and to cause death in less than one hour.

COMPOSITÆ.—*Lactuca virosa.*—The lettuce secretes a well known milky fluid, which, when exposed to the air, hardens and forms the drug known as lactucarium. Although this juice is strongly narcotic, *L. virosa* is probably not poisonous to man, in spite of its specific name, and its properties, like those of many other plants, have been greatly exaggerated.

Some of the Compositæ are poisonous to insects, notably *Chrysanthemum roseum*, which gives "Persian insect powder," and *C. rigidium*, which furnishes "Dalmatian insect powder;" and the oxeye daisy, *Chrysanthemum Leucanthemum*, and fleabane, *Inula dysenterica*, are said to be destructive to fleas.

LOGANIACEÆ.—Although this order is chiefly tropical, and but little represented in our latitudes, I cannot pass it over unnoticed, as it is eminently poisonous and affords some of the most toxic drugs known. *Strychnos Nux-vomica*, a native of Ceylon, produces fruit the size of an orange, the flattened orbicular seeds of which contain, in great quantity, two violently poisonous alkaloids, strychnine and brucine, which are largely used in medicine. This plant has a representative in the Philippine Islands, in *S. Ignatii*, the seeds of which, under the name of St. Ignatius beans, are largely used for the manufacture of strychnine. Strychnine is perhaps, after prussic acid, the most virulent of poisons. It kills in a few minutes, and its victims perish after horrible contortions. As already stated, it has no effect when directly applied to nerve tissue. From the bark of *S. toxifera* of Guiana is prepared the dreaded "Wourari" or "Curare" arrow-poison.

SOLANACEÆ.—A widely distributed group of plants, characterized by their generally dangerous and narcotic properties. In some species a certain part of the plant may be edible, or even very wholesome, while all the other parts retain more or less narcotic properties. The tomato is an instance; while the leaves, stem, and fruit of the potato are strongly narcotic, and the tuber itself, when grown in the air and light, becomes poisonous. Death has actually taken place from eating this vegetable grown in such conditions.

Atropa Belladonna.—The dwale or deadly nightshade is, perhaps, of all the poisonous plants, the one best known to be so, and on this account cases of people being poisoned by it do not more frequently occur, for otherwise its berries are not unattractive, especially to children. Its active principle resides in a narcotic alkaloid, atropine, which is present throughout the plant, but in larger quantity in its dark purple, cherry-like berries. These are highly toxic: a very few of them will cause certain death, and even half a berry has sometimes proved fatal to children. Atropine has the peculiar and useful property of dilating the pupil of the eye.

Solanum dulcamara; S. nigrum.—The bitter-sweet and the common nightshade are also more or less poisonous according to the quantity of solanine their sap may happen to contain—this seems to be very variable. The alkaloid solanine is most readily obtained from the sprouts of potatoes.

Hyoscyamus niger.—The henbane, the active principle of which is the alkaloid hyoscyamine, is becoming naturalized in this country. It is a dangerous plant for man to eat, but not so to cattle, horses, or swine. Horses have been given one to two pounds of the plant without any evil effects. The most powerful parts of the plant seem to be its leaves and seeds, and they will soon cause, in man, giddiness, stupor, and delirium, but seldom death. As a remarkable instance of its effect, I may quote a case, recorded by Dr. Houlton, in which the roots were eaten by the inmates of a monastery for supper. All who had partaken of them were more or less affected during the night and following day. With some, the actions induced were rather ludicrous. One monk got up at midnight and tolled the bell for matins, while of those who obeyed the summons, some could not read, others repeated what was not in their breviaries, and many were seized with the strangest hallucinations.

Datura Stramonium.—Though not a native plant, it is now thoroughly naturalized. The whole plant has an unpleasant, stupefying smell and is highly toxic; in fact, it is the most poisonous of the nightshade tribe. The action which this plant exerts on the nervous system, the delirium it causes, and the hallucinations it gives rise to, explain the effects obtained by its means by the sorcerers of the Middle Ages, and which earned for it the name of devil's apple. The plant contains two alkaloids, daturine (atropine) and stramonine.

Nicotiana tabacum, N. rustica, etc.—Tobacco also belongs to the products of this order. It is rich in an oily alkaloid, nicotine, which is a very strong narcotic-irritant poison. One single drop, placed on the tongue of a cat, killed it in two minutes, and two drops injected into a dog speedily caused its death. In its effects on the nervous system, nicotine is directly opposed to strychnine, for while the latter excites the nerves up to a tetanic condition, nicotine decreases the activity of the nervous system, and it therefore proves a most efficacious remedy against tetanus. On the other hand, tobacco agrees with nux vomica in the peculiarity of producing no effect if applied directly to the nerves.

SCROPHULARINEÆ.—*Digitalis purpurea,* the foxglove, one of the handsomest of garden plants, is also one of the most powerfully poisonous. From its leaves is prepared quite a formidable array of drugs: "Digitaletin, digitalin, digitoleic, volatile and non-volatile digitalic acids, and inosit," but of these digitalin is the most important. It is believed that digitalin has an "accumulating power" over the action of the heart, and that doses so small that at the time they will produce no unpleasant effect may, if taken repeatedly for some time, occasion sudden death.

The THYMELÆACEÆ constitute an order of plants that are generally credited with the possession of acrid properties. *Daphne laureola* and *D. mezereum,* the spurge laurel and mezereon, contain in their berries a substance named coccognin; they are highly poisonous; a few (three or four) have produced serious illness, and a larger number, if eaten, would prove fatal. Their color, black in *D. laureola* and bright red in *D. mezereum,* makes them attractive to children, and therefore more dangerous. The bark of these and allied shrubs produces a bitter glucoside, daphnin, which renders them the most powerful of acrid poisonous plants. The mere outward application of the bark on the skin rapidly produces a deep, penetrating, and often ulcerating inflammation, while a strong decoction will completely destroy the mucous membrane lining the alimentary canal.

The EUPHORBIACEÆ constitute a large order of some three thousand species. Many of these contain a milky juice, "latex," which is often highly toxic, though in others the poisonous principle may be dissipated by heat, and they then yield such edible substances as cassava meal and tapioca.

The cassava (*Manihot utilissima*) contains prussic acid, and possibly another acrid principle of the nature of the one found in some spurges, and these render its juice highly poisonous. The roots of this plant, however, are rich in farinaceous matter, from which the cassava meal and tapioca are prepared. These roots, which weigh 30 to 40 pounds, are grated; after washing, the poisonous juice is separated by pressure, and the residue is then made into thin cakes, and baked. Prussic acid and the acrid principle being volatile, the remaining poison is completely dissipated during the baking. Tapioca is a pure starch which settles in the troughs where the cassava meal is washed. It is granulated upon hot plates.

URTICACEÆ.—*Urtica urens, U. pilulifera,* etc.—Although our nettles can scarcely be called poisonous plants, yet no one who has ever fallen into a bed of them, and there made their close acquaintance, will be surprised to see them mentioned here. As is well known, the leaves, etc., of the nettle are covered with numerous stiff hairs. These hairs have siliceous walls—as can be proved by heating a portion of the leaf red hot on a mica plate or platinum wire—and their tips are bent into sharp hooks. In case of careless contact, the hairs, by means of these points, enter the skin, and being very brittle they break off, and the sap, which is strongly caustic, enters the wound and produces inflammation. The sap of the hair or "sting" of the nettle contains a volatile acid of an acrid, pungent odor, similar to acetic acid, and it is called formic acid, from having first been found in ants. As yet formic acid has been discovered in only a few plants, viz., in the leaves, bark, and wood of the Coniferæ, in the fruits of *Sapindus saponaria*, *Tamarindus Indica*, the leaves of *Urtica* and *Sempervivum tectorum;* but it exists, in all likelihood, in many other plants (Dr. Wittstein). The burning pain produced by the sting of the nettle is well known, but even that of the very virulent species, *U. pilulifera*, soon abates and disappears. Their effects, however, are not to be compared with those of some Indian species. M. Leschenault thus describes the result of touching *Urtica crenulata* in the botanic gardens at Calcutta: "One of the leaves slightly touched the first three fingers of my left hand; at the time I only perceived a slight pricking, to which I paid no attention, but the pain continued to increase, and in an hour it had become intolerable; it seemed as if some one was rubbing my fingers with a hot iron, though no swelling or inflammation could be seen. The pain rapidly spread along the arm as far as the armpit. I was then seized with frequent sneezing, with a copious running of the nose, as if I had caught a violent cold in the head; soon after I experienced a painful contraction of the back of the jaw. . . . I continued to suffer for two days, and the pain returned in full force whenever I put my hand into water. I did not finally lose it for nine days."

I must not fail to mention the celebrated upas tree (*Antiaris toxicaria*), the juice of which is a violent poison, as it contains strychnine. Its effects, however, have been greatly exaggerated. "The tree is one of the largest in the forests of Java. Close to the ground the bark is, in old trees, more than an inch thick, and upon being wounded yields plentifully the milky juice from which the celebrated poison is prepared. The inhabitants do not like to approach it, as they dread the cutaneous eruption which it is known to produce when newly cut down. But except when the trunk is extensively wounded, or when it is felled—by which a large portion of the juice is disengaged, the effluvium of which, mixed with the atmosphere, affects the person exposed to it with the symptoms above mentioned—the tree may be approached and ascended like the common trees of the forest." (Dr. Horsfield.)

CONIFERÆ.—*Taxus baccata.*—Though the dangerous properties of the yew have sometimes been denied, it is now a well known fact that its leaves and the kernels of the fruit are highly toxic, and have often proved fatal to human beings and to cattle. The leaves contain an alkaloid—taxine—which dries in the form of a white, loose, amorphous powder, very bitter to the taste and a violent narcotic-acrid poison. Several cases are known where children have died through eating the berries, and the leaves have often caused the death of women who had taken infusions of them under mistaken ideas. The juicy red cups of the berries are harmless, but the kernels, as already stated, are highly poisonous. The savin (*Juniperus sabina*) is also toxic, and the powder prepared from the dried tips of the branches greatly irritates the alimentary canal, sometimes to a fatal point.

AMARYLLIDEÆ.—To this order belong the narcissus, daffodil, snowdrop, etc., and, as the beauty of their flowers has made them such general favorites, many readers may be surprised that every part of these plants, especially in *N. pseudonarcissus*, *N. poeticus*, and *N. biflorus*, is strongly emetic, and their very odor, though pleasant, is deleterious, producing intense headache, stupefaction, and even vomiting, if indulged in to excess. Their active principle is particularly strong in the bulbs.

DIOSCOREÆ.—The black bryony, *Tamus communis*, possesses powerful acrid properties, which render it dangerous. Death in its most painful form has been the result of overdoses of the medicine prepared from its roots by quacks and others. (Professor Johnson.)

LILIACEÆ.—*Scilla maritima.*—A squill of the Mediterranean region, and sometimes cultivated in gardens, has a large bulb, from which is prepared a yellowish-white powder—scillitin—which is a virulent narcotic-acrid poison. The bulb of the English bluebell or wild hyacinth, *S. nutans*, is also very acrid, and probably has a deleterious effect similar to, but by far less powerful than, that of the Mediterranean species.

Colchicum autumnale.—The whole plant of the meadow-saffron contains the alkaloid colchicine, and its seeds sabadillic acid, and these render the plant toxic to a high degree. Here may be mentioned *Veratrum album*, which grows in many places on the Continent, and *Schænocaulon officinale* of Mexico. The root of the one and the seeds of the other contain both veratrine and sabadillic acid, which combine to make the respective parts of these plants virulently poisonous.

AROIDEÆ.—*Arum maculatum*, cuckoo-pint or wake-robin, is a rather common plant, 6 to 10 inches high. The stalk, leaves, and fruit are intensely acrid, and if they are eaten the tongue and throat become so swollen that death, preceded by convulsions, has often ensued. The corm also possesses these properties, and if it is crushed and rubbed on the skin it will produce a burning sensation, and even raise blisters. Like in the case of the cassava, heat will dispel the poisonous properties of the roots of the arum, and by soaking these in water, then baking and reducing them to powder, a very wholesome starch is produced, known as Portland sago.

GRAMINEÆ.—The grass tribe gives us but one deleterious species, and this is the darnel, *Lolium temulentum.* The flour ground from its seed is gray, has an unpleasant smell, and when boiled in water it causes a strong effervescence and produces a stupefying odor. When kneaded with water it makes a bad dough, which does not rise properly. The bread baked from it is black, and has a bitter, unpleasant taste. The darnel is a narcotic-acrid poison, and its effect generally resembles that of intoxication by alcohol. "The first intoxicating effect is usually succeeded by dizziness and loss of sight, often followed by delirium. In some cases paralysis and gangrene of the limbs have followed the continued use of bread containing darnel." (Professor Johnson.)

We have now passed in review the most important poisonous plants. But we have many others which possess more or less acrid properties, or possibly contain other poisons, but in such small quantity that they have not proved dangerous to man. Among these we may mention the wood-sorrel, *Oxalis acetosella;* wall-pepper or biting stone-crop, *Sedum acre;* sundew, *Drosera rotundifolia;* elder, *Sambucus nigra;* leopard's-bane, *Doronicum pardalianches; Lobelia urens;* hound's-tongue, *Cynoglossum officinale;* yellow toad-flax, *Linaria vulgaris;* box, *Buxus sempervirens;* sorrel, *Rumex acetosa; Iris fœtidissima;* flag, *I. pseudacorus;* herb Paris, *Paris quadrifolia*, etc.

No list of poisonous plants would, however, be at all complete that did not at least mention those remarkable cryptograms, the FUNGI—mushrooms or toadstools—for while many species are highly nutritious, many more are virulent poisons. One of our leading fungologists, an enthusiastic fungus-eater, tells us he invariably tastes every toadstool new to him, and has notes, to this effect, on all the species he has selected: "In some species the effect is very peculiar; sometimes (as in *Agaricus mellens*) it causes a cold sensation at the back of the ears, and swelling of the throat; at others (as in *Marasmius caulicinalis*), the taste proves to be intensely bitter; some are so fiery (as in *Lactarius turpis*, *L. blennius* and *L. acris*) that the smallest piece placed upon the tongue resembles the contact of a *red-hot* poker." Their odor he also found to differ: "Many are very pleasant, like meal; a few are sweet; some resemble stinking fish (as *Agaricus cucumis*); one, mice (as *A. incanus*); another, camphor; whilst *Marasmius fœtidus* and *M. impudicus* are like putrid carrion; others are like burnt flannel, garlic, rotten beans, and almost every imaginable disagreeable thing." (W. G. Smith, in *Science Gossip.*)

Unfortunately there is no "golden rule" for the discrimination of the edible and noxious species, and a long study, often of purely microscopical details, is required before this can be done with safety. Roughly speaking, we might say that *edible* mushrooms generally have a white, creamy or buff color; the gills are white or pink, and the stem white or gray; their taste is mild or sweet, and their odor agreeable; their white juice does not readily change color when exposed to the air, and their flesh is firm. On the other hand, most fungi that are red, scarlet, green or black on the top, those having yellow, red or brownish gills and a stem of similar color or perhaps spotted, all those that have an acrid or burning taste and an unpleasant smell, and those that turn blue or red when broken, that freely secrete a milky fluid, feel slimy and generally flabby—should be avoided as probably *dangerous*. Among the most common of the poisonous species we find: *Agaricus vernus*, *A. Phalloides*, *A. mascarius*, *A. sinuatus*, *A. crustuliniformis*, *A. piperatus; Lactarius pyrogalus*, *L. acris*, *L. rufus; Russula emetica*, *Marasmia urens*, and *Phallus impudicus*.*

We have now thrown a rapid glance through one of the most interesting pages in the wondrous book of nature. In spite of our necessarily somewhat hasty review, we have found a formidable array of plants noxious to animal life. These unexpected results naturally lead us to inquire: What is the cause of poisons in plants, and how were they produced?

Poisonous plants do not form a single and isolated group; they are, as we have seen, scattered here and there among the different orders, nearly every order containing, in some part or other of the world, some poisonous species. We have, likewise, seen that all these plants do not produce the same poisons, although generally all species of an order, or at least of a genus, possess similar properties. We cannot have helped observing that we seldom find two or more poisons in different plants of the same nature or intensity, while, on the other hand, we can easily trace a perfect series where the toxic properties range from a slight acidity of the sap (as in *Rumex oxalis*, etc.) to a copious and highly virulent special secretion. These secretions, again, may be found either all over the plant, or they may be produced in particular, often very limited, organs, as in many seeds (notably the "ordeal beans" of *Physostigma*), in barks, roots, the "stings" of *Urtica*, etc. From this follows that while in some plants every part is toxic, in others some parts are not only harmless but indeed highly nutritious (*e.g.*, the potato). And, finally, let me remark that few plants are equally noxious at all periods of their life, as many only reach their highest point of virulence at the time of flowering. I have laid so much stress on this *tendency to vary* because it is *this* that has enabled natural selection to preserve the most poisonous plants of any given group, and thus to give rise to more highly toxic varieties and species.

Plants form the natural food of animals, and are continually destroyed in incredible numbers by multitudes of snails, insects, birds, and mammals. It is evident that any species possessing no defenses (or one the defenses of which had ceased to be adequate to new requirements) would soon be exterminated—as many doubtless have been. Mechanical defenses, such as thorns, spines, and hairs, though forming a good protection against some of their foes, are soon overcome by others, and it is plain that no plant could be better pro-

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*** For further information see "Mushrooms and Toadstools," by Worthington G. Smith (Allen & Co.), with two sheets containing altogether sixty excellent colored figures of edible and poisonous fungi.**

tected than by having properties noxious, or at least distasteful, to most animals preying on it. Now, any animal coming to feed on a bed of growing plants, such as we often see in the spring, would naturally select for food those most agreeable to the taste, or, if all happened to be seedlings of a poisonous species, it would eat the least loathsome. In this way the animal would unconsciously favor the most virulent plants, not alone by letting them grow on, but also by clearing the ground of the less harmful species or individuals that would have competed for moisture, soil, air, and light.

Whether some poisonous products (some of the alkaloids, for instance) have now come to be of other uses in the economy of the respective plants, we do not know. The poisons of plants must, however, be regarded as purely defensive weapons, and the peculiar nauseous odor, the dark, lurid, ugly colors, and generally repellent appearance of most poisonous plants warn all animals of their dangerous nature.

THYMUS SERPYLLUM, LIN.

Many inquiries have of late been made concerning the use of this plant, known as Wild Thyme, or Mother of Thyme, as a remedy in whooping cough. It has been claimed that a strong infusion, somewhat sweetened and mixed with gum arabic, is very efficacious in whooping cough, stridulous sore throat, etc., favorable results following the use of the mixture in a very few days. The habitat of this plant is Europe, but it is also found naturalized in America. A very closely allied and similar species is *Thymus vulgaris*, Lin., commonly known as thyme. The properties and uses of the two plants are very similar.

W. B. G., Texas.—The parcel of plant which you sent some time since we identify as *Dysodia chrysanthemoides*, Lag., commonly known as "Fœtid Marigold." We fail to find that any medicinal properties have ever been recorded for this plant.

N. S., California.—The specimen which you send is not derived from the "Umbrella-plant" of California, but rather from *Scrophularia californica*, Cham., a species of figwort. The latter may possess some of the virtues claimed, since it is allied to *Scrophularia nodosa*, Linn., a well known diuretic.

[A number of plants have been sent in for identification, but the names of the senders do not appear on the packages, rendering conjecture of their source impossible. We are willing and ready to aid our correspondents in identifying botanical specimens, but name and address must necessarily appear plainly written on the wrappers; otherwise much vexatious delay and trouble is caused, if, indeed, the anonymous parcel is not consigned to the rubbish-heap.—Ed. Bulletin.]

Depilatories.

Dr. N. M. Co., Utica, N. Y.—We offer for your selection several formulæ, obtained from various sources, which are regarded as harmless depilatories:

(1)	Sulphuret of calcium Quicklime } āā	℥ j.

Reduce separately to a fine powder; mix, and keep the mixture in well stoppered bottles.

(2) *Chinese Depilatory.*

Quicklime	℥ viij.
Pearl ash	℥ j.
Potassium sulphuret	℥ j.

Powder finely and place in tightly corked bottles.

(3) *Rayer's Depilatory.*

	Parts.
Charcoal	1
Quicklime	8
Salt of tartar (dry)	16

Reduce to a fine powder, mix, and place in well stoppered bottles.

(4) Pass a current of hydrogen sulphide into a thick creamy mixture of water and finely sifted slacked lime, until it acquires a steel blue color and is not further darkened by the gas. Place in tightly stoppered bottles.

		Parts.
(5)	Barium sulphide	2
	Zinc oxide	1
	Starch	1

Finely powder and mix.

Barium sulphide is regarded as the safest and quickest depilatory. All sulphides are caustic in their action, a fault inherent in all depilatories, but they are not regarded as dangerous further than that they are likely to irritate the skin. Frequent applications should be avoided. Orpiment, or sulphide of arsenic, should never be used.

In applying a depilatory, the part having been previously shaved, the application should be made to only a small surface at a time, care being taken to prevent its spreading; then, after about five minutes, it should be scraped off with a blunt knife, the part washed with water, and an emollient applied.

All depilatories become worthless unless entirely excluded from the air, hence the necessity of keeping them in tightly stoppered containers. No liquid should be added to the dry ones until required for use, and then not to more than is required for one application.

Selenium.

C. G. O., Sandusky, O.—Selenium, a rare element closely resembling sulphur, was discovered in 1817 by Berzelius while examining the deposits of the sulphuric-acid chambers at Gripsholm. It does not occur native, but is found in the selenides, such as lead selenide and the double selenides of mercury, lead, silver and copper.

In its properties and compounds it resembles sulphur. It is known in three modifications, viz., amorphous, vitreous, and crystalline.

Selenium combines with hydrogen with the formation of hydrogen selenide; with oxygen it forms selenium dioxide, selenious acid, and selenic acid.

Flowers of selenium, a scarlet powder, is obtained by a process similar to that used in the production of flowers of sulphur.

The therapeutic value of selenium has been studied by Domontporcelet and Féry, who reported (*Chem. Ztg. Report*, 1893, p. 222) that selenium is much more poisonous than sulphur and requires considerable study before it can be administered. Externally in the form of an ointment (2 grammes amorphous selenium and 30 grammes petrolatum) it has given very satisfactory results, better even than sulphur under like conditions.

Zero Point.

According to an exchange, Fahrenheit was the one who first used the term "zero" as regards the thermometer. The word is derived from the Spanish, and means *empty*. It is remarkable that he discovered his zero (the temperature of a mixture of snow and salt) when he was 10 years old. After all, therefore, it is not surprising that it is so inconvenient a point to hit upon, seeing that it is the result of a boy's experiment.

Ammonium Permanganate.

B. M. C.—This salt closely resembles potassium permanganate, with which it is isomorphous. It is very soluble in water, and is decomposed by gently heating. According to Watt's Dictionary of Chemistry, it is made by gently rubbing together silver permanganate with ammonium chloride and water. The solution is filtered, and evaporated at the ordinary temperature over sulphuric acid.

Care should be taken not to rub ammonium permanganate in a mortar, as friction causes it to explode, manganese dioxide and ozone being among the products of decomposition.

The following questions, published in the *Chemist and Druggist*, were given at a major examination in England:

A certain mass of air measures 400 c.c. at 10° C. and 750 mm. pressure. At what temperature will it measure a liter, if the pressure is 760 mm.?

It was found that 0.2 gramme of desiccated potassium bromide, contaminated with chloride, required 17.2 c.c. of $\frac{N}{10}$ silver-nitrate solution for complete precipitation. What percentage of potassium chloride did the salt contain? ($AgNO_3=170$, $KBr=119.1$, $KCl=74.5$).

How many of the candidates for registration who appear before our State Board would be able to answer them?

LONDON LETTER.

Cash on the Development of Pharmacology—The Fall of Empiricism—Snblimed Sulphur in Diphtheria—Benzene in Influenza—Lead Poisoning by Tea—Sarcolactic Acid—Flückiger's Reactions.

One of the most interesting addresses of the present session was that delivered by Professor Cash, of the University of Aberdeen, to the Scotch Branch of the Pharmaceutical Society. In it he very clearly defined at the commencement the respective duties of the pharmacologist, the pharmacist, and the therapeutist, with three questions: Why do we use this drug? How is it to be used? When should it be used? The medical man must bear in mind and rely on the labors of the men who answered the queries, why? how? in order to apply the accumulated knowledge to the cure or prevention of disease. It is not rash to predict that the advent of a new remedy will be through the channels of close research and study, and that the scientific practitioner of the future will refuse to make use of anything that has reached his hands by less certain ways. Pure empiricism is decaying, though its decline will naturally be gradual in character. As Professor Cash put it, there has been a genuine "spate" of bodies having germicidal, antipyretic, and hypnotic properties, to some of which a permanent position is reserved, whilst others are already vanishing. The very magnitude and wealth of production threatens to exceed the strength of the pharmacologists, a comparatively small body of men dealing with processes of examination which are necessarily slow and time-exacting.

Amongst other lines of labor, a steady attempt has been made to produce modifications and combinations of certain carbon compounds of the aromatic and fatty series, with the object of enforcing and improving their effect, or else of eliminating some undesirable property or action which the original substances possessed. For instance, in reference to the extensive use of caffeine and theobromine as diuretic remedies, the therapeutical effects of the parent alkaloid, which were first recognized by Dr. Brackenbridge of Edinburgh, have been very much enhanced by the employment of the sodio-salicylate of theobromine. It is shown by Dujardin-Beaumetz that this has scarcely any effect in increasing the strength of the heart contractions, and that its influence upon the central nervous system is inconsiderable, whilst the secretory cells of the kidneys are strongly stimulated. This process of evolution of a therapeutical agent is natural and satisfactory.

With some other remedies the increase of knowledge is not on an equal level. *Gelsemium nitidum*, for instance, is a drug concerning the action and composition of which much uncertainty existed at the time of its introduction into the Pharmacopœia. Something had been done by Bartholow and others to obtain scientific proof respecting its action, but it seems to have been fired like the swivel-gun of the amateur wild-fowl sportsman into the flock of diseases passing by, in the hope that something would be hit. Recently the researches of Cushey have shown that two distinct alkaloids, to a large extent antagonistic, are present in the wood, one having a tetanizing strychnine-like effect, whilst the second, gelsemine, actually paralyzes, by exerting a curare-like action upon the motor-nerve terminations. These facts will make it necessary to reconsider the advisability of employing the whole plant or having recourse to its isolated principles.

The problem of modifying the composition of the human tissues by inoculation and injection, so as, if possible, to interfere with microbic multiplication, is, in Professor Cash's opinion, scarcely yet understood, but all take a deep interest in its solution. Very wonderful results have been obtained by Ehrlich with those bodies described as toxalbumins, which throw a powerful light on the production of immunity. In the castor-oil seed and in that of jequirity (*Abrus precatorius*) principles exist bearing the names of ricin and abrin, which are both intensely toxic bodies, so that very minute fractions of a grain are fatal to mammals when introduced directly into the circulation. As these bodies are much less active when taken into the stomach, Ehrlich proceeded to feed white mice on a diet into which one or the other of them entered, and found that after this dietary had been continued some time such a change had developed in the reaction of the animal towards abrin and ricin respectively, that doses that would previously have proved fatal could be injected without the least ill effect being produced. This immunity was also transmitted to the progeny of the protected animal.

Apart from the bearing on inoculation treatment, these results may possibly explain why certain medicinal substances, which contain principles of a similar nature to those just spoken of, may be modified in their effect by their previous employment upon the same individual; and in fact the question of idiosyncrasy towards the action of drugs may be also involved.

Considering the complexity of many of the newer remedies, it is refreshing to read in the medical papers of some instances lately in which simpler and more familiar substances are recommended for the treatment of most common diseases. Thus Dr. R. Frazer mentions good results obtained with sublimed sulphur as a local application in diphtheria. To refer to two cases: A child of four years was suffering with what was diagnosed as diphtheritic croup. Perchloride of iron, chlorate of potash, and glycerin, with a local application of permanganate of potash, were prescribed. Next day the child was worse and the membrane more extensive; it was decided to blow sublimed sulphur down the throat, which was repeated several times daily. The improvement was slow, but the membrane seemed daily to be bleached and thinned by the sulphur. On the eighth day the pellicle was seen to be breaking up, and next day it had disappeared. Dr. Frazer compares with this an almost exactly analogous case in which the permanganate treatment was persisted in, and convalescence consequently delayed two months.

The treatment of influenza with ordinary coal-tar benzene has been extensively and successfully adopted by Dr. Robertson. The drug is always well tolerated and can be administered in many forms. Administered in the form of an emulsion in lemonade, 5 minims every two and a half hours, it was most effective. As a rule, in about two hours after the first dose the general discomfort had disappeared, and within the first twenty-four hours the temperature was observed to be normal, further pyrexia being rarely noticed. Convalescence was usually rapid, with very little of the debility usually noticeable when routine treatment is followed.

At various times scares have been raised as to the possible introduction of poisonous earthy matters into tea-leaves in the process of drying. According to Dr. Freeman, the danger from poisoned tea lies nearer at home in the practice of packing tea in thick lead paper to preserve aroma and strength. Near Andover no fewer than five cases of undoubted lead poisoning amongst cottagers came under his notice last winter, and this autumn he has had nine new cases on his hands. Having practically excluded every other probable source of lead, Dr. Freeman was driven to examine the tea sold at shops in the neighborhood, and analysis in every case showed the presence of lead, sometimes in considerable quantities.

A passing note may be made of the fact that Professor P. Frankland has discovered a microscopic organism which is capable of splitting up the inactive lactic acid synthetically prepared into the dextro-rotatory sarcolactic acid obtainable from muscular tissue and the isomeric lævo-rotatory lactic acid obtained from cane-sugar by fermentation. This establishes the truth of the isomeric theory as applied to lactic acid in the same way as Pasteur established it in reference to tartaric and racemic acids.

It will also be of interest to readers of the BULLETIN OF PHARMACY to learn that Nagelvoort's translation of Flückiger's "Reactions" is as much appreciated in this country as in America. In spite of the fact that the spelling of chemical names is naturally in accordance with the recommendations of the American Association of 1891, the differences are so slight that it in no way fogs the simple and readily intelligible description of the methods of applying the tests for alkaloids and general medicinal agents.

BERLIN LETTER.

The Morphia Question Again—Beverages and Artificial Fruit-Essences—The Odor of the Violet—Symphorol—The Melting Point of Inorganic Salts.

The journalistic debate that arose last month as to the dosage of morphia has not yet subsided. It is quite possible that every medical man will retain his own individual opinion on the subject of large and small doses and the niceties of administration, but at any rate the discussion has served to ventilate the inaccuracies, not to say dangers, of prescribing potent remedies for administration in drops. The prescription in dispute ran thus:

℞	Morphin. mur....................	0.2 Gm.
	Aq. dest..........................	10.0 Gm.

To take twenty to thirty drops in the evening.

Now, according to the customary reckoning that 20 drops go to one gramme, Dr. Lewin maintains that the maximum dose of the German Pharmacopœia is only reached with 30 drops, whereas Dr. Halle and Dr. Sonntag, representing the opposite interests in the case, point out that the statement of the Prussian medical calender of 16 drops to the gramme is more correct and in accordance with actual experiment. Thirty drops of the prescription would in this case contain 0.037 gramme morphia. Moreover, if the dispenser employed a drop-glass, which he is quite at liberty to do, only 11 drops would go to the gramme, and consequently 30 drops would contain 0.055 gramme morphia.

This instance is quite sufficient to support the contention that potent drugs should never be prescribed in a form in which the quantity introduced into the organism cannot be exactly controlled. For safety of administration the prescription of morphia especially is indicated in powder form, or when in liquids the whole contents of the bottle should not contain more than a maximum dose.

The composition and relative values of natural and artificial fruit-essences is a subject that has also been exercising the minds of the pharmaceutical body lately. The increased consumption of aërated waters flavored with fruit essences has made it very essential that both the manufacturer and public shall come to a definite understanding as to what constitutes an adulteration, and what may be regarded as a warranted addition or substitution to maintain the natural color and flavor of the fruit represented. Bearing in mind the important branch that the sale of similar drinks constitutes in the druggist's business in the United States, the conditions and opinions prevailing on the subject on the European continent will no doubt be read with interest.

Under "lemonade" are included solutions of small quantities of acid, innocuous to the human system, in cold water, to which is added the juice of some pleasantly-flavored fruit. Sugar may be added according to taste, if the natural juice does not contain sufficient. Consequently the lemonades contain three principal constituents: water, acid, and fruit essence. The drinks also have a triple purpose: to quench the thirst, to cool, and to satisfy the palate, corresponding to the three constituents. As lemons possess these characteristics—a juice rich in pleasant acids and a peel containing a refreshing essential oil—they have given the name lemonade to a whole class of drinks, as raspberry-, strawberry-, pineapple-lemonade. It is, however, permissible to prepare lemonades to some extent artificially—that is to say, it is not necessary to take the acid from a fruit. Thus a small quantity of a chemically pure acid, innocuous to the system, may be dissolved in much water, and fruit-juice added. Such "lemonades" are frequently prescribed by medical men and sold by apothecaries. Even the use of acetic acid or mineral acids, such as phosphoric, instead of the so-called "fruit" acids, is defended and regarded with a lenient eye.

The production of the fruity flavor with artificially prepared chemical products is, however, regarded in an entirely different light. It is fairly argued that it does not matter whether chemically pure citric acid is employed or the juice of the fruit, but that the specific flavoring agent should not only remind one of the fruit, but represent it. A mixture of water, acid, artificial ethers, sugar, and red coloring matter should at the most only be permitted as an "artificial lemonade." At the same time it must be remembered that in some cases the ordinary fruit syrup cannot be employed, especially for the preparation of effervescent drinks. Thus a mixture of carbonic-acid water and raspberry syrup does not possess a palatable flavor, and a manufacturer supplying this would soon lose his custom, even if he were not proceeded against for supplying a product that speedily becomes repugnant in flavor and appearance and is subject to an acid fermentation.

In other cases fruits of pleasant but delicate flavor, as pineapple and strawberry, do not possess a powerful aroma like raspberry, and therefore do not go far enough for economical use. If a small quantity of artificial fruit ether is added, it is argued that as this improves the lemonade and is not for deceitful purpose, all the important constituents of pineapple and strawberry being present, there is no adulteration. The practice, however, is admitted to be illegal in the present state of the law. Moreover, as regards the hygienic qualities of such artificial lemonades, these mixtures of artificial fruit ethers are most nauseous to some individuals and disturb the general condition. In concentrated solutions the action of these ethers of fusel oil and its homologues is most disagreeable.

Yet constructive chemistry is evidently destined to play as important a part in the near future in catering to the palate and olfactory sense as it has already in pleasing the eye with its variety of colors. The newest achievement has been the synthesis of the compound that bears the characteristic aroma of the violet. Professor Tiemann, to whom the artificial production of vanillin is accredited, isolated the odorific principle of rhizoma Iridis and found it to be a ketone of the formula $C_{13}H_{20}O$, to which he gave the name *Irone*. From citral, the specific constituent of lemon oil, he has obtained an isomeric body, called *Ionone*, which is almost identical in aroma with Irone, but has a still milder perfume, recalling the flowering violet. It is thought that Ionone or Irone, or a modification of either, must therefore be present in the flowering violet, and it is not improbable that the aromatic principle of the violet will soon be an article of commerce in synthetical form.

The sulphonic acid salts of caffeine, which have been introduced as diuretics by Drs. Heinz and Liebrecht under the name of Nasrol, have been renamed Symphorol. To distinguish the salts, the initial letter of the base is written after the name: thus the sodium salt recommended in dropsy is called Symphorol N; the lithuim salt for use in gout and uric acid diathesis, Symphorol L; and the strontium salt for nephritis, Symphorol S.

The determination of the melting-point of organic substances is a reliable and practical method of easily recognizing their purity, and therefore is frequently performed. Reliable data as to the melting-point of the most common inorganic salts are, however, wanting, on account of the difficulties attending the measurement of temperature. Victor Meyer has determined a number of salts by means of melting in a platinum crucible, stirring until solidification, and registering this temperature, which is stationary for some time, by means of a special air thermometer made of platinum. For sodium chloride he found 851° C., sodium bromide 727° C., sodium iodide 650° C., caustic soda 1098° C., potassium chloride 766° C., potassium bromide 715° C., potassium iodide 623° C., caustic potash 1045° C.

NEW YORK LETTER.

Despite the dullness of trade, usually induced by preparation for inventory, there have been a number of important advances in prices in direct consequence of the material reduction made in stocks throughout the country while the stringency was at its worst. I will review, therefore, a few articles, as follows:

Opium.—The market is weak. The price has continued to decline. The demand has been very light. Buyers, all fearing a still further decline, make their orders as small as possible, with the result that the sale of a few pounds at a time is more frequent than orders for a case or more.

Quinine.—The demand for some weeks back, as at present, has been very heavy. It is clearly apparent that the goods held by speculators and in second hands are now practically exhausted, and if it were not for certain very old stock sent to this market from London for sale, the article would now be practically in the hands of the manufacturers. As it is, the price in second hands has approached so closely to manufacturers' prices that consumers prefer to give the slight difference (but a quarter of a cent more) direct to the manufacturers for presumably fresh goods, rather than run the risk of discolored goods and short weights when buying that which has been lying for a long time in the market. No one can predict what action the manufacturers will take—whether they will be content with their present prices, or whether, when they get the matter into their hands once more, they will make an effort to raise their prices, thus increasing their profits. It is, in our judgment, perfectly safe to buy from hand to mouth.

Menthol.—There is practically none here. All that is held is in the hands of one or two parties. The demand is heavy, and no advice is at hand of any fresh supplies on the way. Therefore, although the present price seems high, none need expect to do better by waiting.

Ipecac has experienced a very sharp advance on the London market, amounting to a shilling a pound, and we are in receipt of the strongest advices to the effect that values will immediately be still further advanced. Should the war with Brazil continue and her ports be further closed, it is difficult to tell what figures the price of this important article will reach.

Cod-Liver Oil, Norwegian.—A much stronger confidence in the market is felt by holders. Thus far there has been no profit in the sales of Norwegian cod liver oil to importers, and should there be an advance, which would only be reasonable, all hands would feel relieved.

Cubeb berries have continued to decline, and have reached a point lower than they have touched for many years before.

Coriander seed is in very scarce supply and held in close hands. The price has almost doubled within the past month.

Celery seed is high and advancing.

Juniper Berries.—Cablegrams from abroad report a total failure of crop, and there is very little in this market.

Insect flowers, as reported in a former communication, are very scarce at the place of production, and advancing continually in price. The least demand from this side would at once run the price up very materially, and make it impossible to furnish insect powder at present rates.

Senega Root.—The efforts of the manipulators of senega root in the Northwest, which succeeded so admirably for a time, seem to have lost power, as the market is very weak, and offers are made from time to time at declining prices.

Cocaine has experienced a decline all around. It is difficult to know the reason of this, as the cost of the crude product is very much higher than it has been for some time.

Manna.—While there has been no important change in the price of the article in this market, cablegrams are received from abroad indicating that the prices have advanced very materially. It is therefore difficult to see how our own market can remain at present figures.

Asafœtida is in very active demand. The ordinary low London grades continue to sell cheap. The higher grades, however, are bringing full prices.

New York, Dec. 6, 1893.

CHICAGO LETTER.

Philadelphia had its Centennial boomerang—and Chicago will have to go through the same ordeal. Reports from other sections are all of the same tenor; but in Chicago the depression in the retailer's trade is more keenly felt, inasmuch as every tenant in the city had to pay from twenty-five to three hundred per cent. more rent than before, without an adequate increase of revenue—in most instances. All living expenses went up with a bound; domestic service became more costly, and poor relations from every quarter of the globe suddenly revived their attachments for their *dear* Chicago cousins.

Never before have we seen such a collapse; retailers report a sudden decline of seventy-five per cent.—in other words, twenty-five dollars of receipts in place of the former hundred!

Several new stores were contemplated, but the projects are in abeyance, the stony-hearted jobber gently hinting that a multiplication of stores is not at present desirable. In the World's Fair district several pharmacies have decamped.

Elkins & Watkins had a receiver appointed; at present they are, to all appearances, simply winding up.

The boom is over; the boomerang is on the rebound; economy and retrenchment have suddenly become fashionable virtues.

Morrison, Plummer & Co. report a greater number of drug clerks out of employment than ever before in the history of the city. In its heyday of prosperity Chicago has more than too many pharmacies; in dull times half the number might be dispensed with, leaving the remainder just enough to fight starvation—not enough for decent living. These are hard facts for philosophers, intent upon State Pharmacy Laws, Political Regulation and the cure of the Cut Rate Evil, to ponder over. The enthusiastic seekers of the Panacea which is supposed to reside in leagues, associations, etc., may turn their mental luminaries upon these dark conditions; they must be lighted; they will not be ignored.

Chicago, Dec. 11, 1893.

AN OPEN LETTER ON THE SALE OF POISONS.

To the Editor of the BULLETIN OF PHARMACY:

The condition of affairs prevailing in Michigan, with respect to the sale of poisons, is humiliating to the profession of pharmacy, and a positive injury to the individual interests of the druggist. Not a week passes by without bringing its quota of one or more reports in the lay press announcing that some one has committed suicide, murder, or an attempt at either, with a substance purchased at a drug store.

In nine cases out of ten the public hears nothing further, and seldom are the guilty parties brought to justice. The untrammeled sale of poisons, and the lukewarm interest accorded to toxicological questions, reflect discredit on the pharmaceutical profession. The public does not take kindly to the fact that the seller of the poison might have prevented the murder, the suicide, or the attempt at either, had he considered the general interest of the community as paramount to the temporary gain.

I have counted about a dozen toxicological cases in one month (August–September, 1893) involving the purchase of a poison; and not one received the scrutiny the public has a right to expect from the better informed class to whom is entrusted this dangerous traffic. The careless indifference with which these cases are regarded is a disgrace to any civilized country.

These facts have been submitted by the writer to the State Board of Health (Sept. 8, 1893), and an answer was received from the Secretary inviting further correspondence upon the subject.

I beg to offer you an excerpt: All poisonous substances to be kept apart from other medicines; no poisons to be sold save on a *written* requisition, and only to persons known to the druggist personally; all sales to be recorded; such a record to be held open for police inspection; powerful poisons not to be sold at all *below a certain quantity.*

The same proposition, set forth at greater length, will be forwarded to the Michigan Pharmaceutical Association in the hope that some good will result from an open discussion—moral, judicial, and professional—in order that the entire project may not be shattered by a technicality, as in the case of the Wisconsin poison law, which was recently "killed."

J. B. NAGELVOORT,
Apothecary.

Detroit, November, 1893.

BOOK REVIEWS

Select Extra-Tropical Plants Readily Eligible for Industrial Cultivation or Naturalization, with Indications of their Native Countries and Some of their Uses. By Baron Ferd. von Mueller, M.D., Ph.D., F.L.S., F.R.S., K.C.M.G., etc., etc., Government Botanist for Victoria. Eighth Edition; revised and enlarged. Melbourne: Chas. Troedel & Co. Five shillings.

It would be difficult to speak of this work in terms that would, to our mind, do it justice, without incurring the charge of exaggeration. The fact that the eighth edition has been reached in Australia shows that an amount of appreciation has been there accorded it fully equal to our own; and if aphorisms may, like rules, be proved by their exceptions, then is it abundantly proven that a prophet has no honor in his own country, for this is clearly an exception. The full title of the book as quoted above has very well expressed the scope and aim of the contents. The work originally appeared as contributions or essays issued by the Victorian Acclimatization Society from 1871 to 1878, with the view of promoting the introduction and diffusion of such utilitarian plants as were considered available for culture in the temperate and sub-tropical conditions of the Australian colony. It was found necessary to collect these writings very shortly after their publication, owing to the frequent calls which the Society received for them, not only from the various colonies of Australia but also from abroad. As a large part of the United States enjoys the same climatic conditions, some evident interest was here aroused in the work, judging from the calls which the Australian publisher received; and to supply these calls more easily the work was published separately in this country soon afterwards.* The writer has had the privilege of comparing a copy then published with the eighth edition that has just come to hand. The first thing we observe in comparing the two is the increased size of the new edition—it having almost 150 pages more of reading matter; the index alone is more than doubled. In the larger genera the additions are very plainly evident—the genus Acacia, for instance, having been enlarged by nine more species which are considered to be valuable from some technological standpoint. The mistakes of the older book have all been corrected, at least all those which we observed; thus we now understand the mystifying statement that long puzzled us, "the root of the oil is used for China-ink," when we see it read "the soot of the oil;" and so with others of similar character. In enumerating the uses of our Saw Palmetto (*Serenoa serrulata*, Benth. & Hook.) the statement is again made that the stem is employed in the manufacture of brushes, although we drew the Baron's attention to the fact some time ago, on the authority of the makers themselves, that it was the root that was so used. The plant we speak of will afford us, quite as well as any other one of the thousands mentioned, the opportunity of showing the economic application of the information placed on record in the book. The reader is told, for instance, in addition to what we have already mentioned, that it grows to a height of about eight feet; that it is particularly well adapted for sea-coast culture; that the leaves are utilized in the manufacture of straw hats, mats, baskets, and for other purposes for which palm leaves are sought; also that it is a grand honey-plant—the next edition will probably record the recent use of the plant as a medicinal agent. The reader, if in search of any particular class of plant-lore, is referred by classified groups in the Appendix to where he may learn of the best scent plants, resin plants, starch plants, timber plants, medicinal plants, oil plants, fibre plants, water plants, etc., etc. Then there is a geographic index, by means of which an approximate idea may be obtained of the climatology relating to the particular groups under this subdivision. There is also a systematic index of genera, affording facility for tracing out any series of plants about which special economic information may be sought. Lastly, a very full index to vernacular names mentioned in the body of the work gives a means of obtaining desired information when the botanical name may not be known. The work is the most valuable one on economic botany with which we are acquainted. G. S.

Annual of the Universal Medical Sciences. By Charles E Sajous, M.D. Cloth; 8vo. Five volumes. Price, $15.00. F. A. Davis Co., Philadelphia.

This is a yearly report of the progress of the general and sanitary sciences throughout the world, in which the editor has had the assistance of seventy associates, besides upwards of two hundred corresponding editors, collaborators and correspondents. The volumes for 1893 are fully equal if not superior to any of their predecessors during the seven years of the publication of this work. In many instances we observe the titles have been more thoroughly and completely worked out, and from more practical standpoints.

The chapters on cholera are by Dujardin-Beaumetz; on the urinary organs, by B. W. Richardson; on the nose, by Chas. J. Sajous; lungs, pleura, heart and vessels, by Whittier and Green; animal parasites, by Dolley; diabetes, by Lépine; rheumatism and gout, by Davis; brain, by Gray; spinal cord, by Obersteiner; mouth, by Solomon Solis-Cohen; fevers, by Wilson and Eshner; diphtheria, croup, and whooping-cough, by J. Lewis Smith and Warner; eruptive fevers, by Witherstine; blood and spleen, by Henry and Stengel; mental diseases, by George Rohé; inebriety and morphinism, by Norman Kerr; uterus, menstruation, etc., by Mundé and Rau; ovaries and tubes, by Montgomery; vagina, by Baldy; obstetrics, by Bredin; dietetics, by Starr and Powell; growth and age, by Minot; brain and nerve surgery, by Pilcher and Lloyd; abdominal surgery, by Packard; rectum, by Kelsey; male genito-urinary, by Keyes and Fuller; syphilis, by White; orthopædics, by Sayre; amputations, by Conner and Freeman; fractures and dislocations, by Stimson; oral and facial surgery, by Matas; surgical diseases, by Tiffany and Warfield; anæsthetics, by Buxton; skin, by Van Harlinger; eye, by Oliver; ear, by Turnbull and Bliss; legal medicine, by Draper; demography, by Levison; bacteriology, by Ernst and Jackson; experimental therapy, by Hobart A. Hare and David Cerna; electrotherapy, by Rockwell, Apostoli, and Grand; climatology and water, by Baruch and Daniels; hygiene and epidemiology, by Wyman and Banks; teratology, by Sudduth; anatomy, by Poirier; physiology, by Howell.

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* By Geo. S. Davis, medical publisher, Detroit, Mich. We learn that a few copies can yet be had.—Ed.

The Annual has become a work positively indispensable to the busy physician, since it selects the best of medical literature as published during the preceding year. The very fact that the work has progressed during eight successive years, and with such widespread circulation both in America and Europe, is sufficient evidence of its value.

The Physician's Perfect Call List and Record. By Dr. G. Archie Stockwell, F.Z.S. Flexible morocco; long 16mo; pp. 200. Price, $1.50. George S. Davis, Detroit.

The fact this work has reached its *eighth edition* is sufficient evidence of its popularity and practical usefulness. In size and shape it is by long odds the most convenient and the best of all of the "Visiting Lists;" it will not break down in the pocket. A prominent feature is the absence of all "dead wood" and advertisements, and the extremely convenient arrangement of most practical contents. The information most demanded for ready reference is to be found upon the inside covers or on the fly-leaves, including use of and changes to the metric system. The posological information is to a great extent a new departure, being very thorough and complete, and so arranged that the dose of any drug can be determined instantaneously. It is newly revised, and embraces the very latest (including the non-official) remedies introduced, up to and inclusive of 1893. Especially commendable is the obstetric table in two colors, and the arrangement for the concise keeping of all accounts, debit, credit, expense, loss, etc. Paper and binding are alike superb.

Topsys and Turveys. By P. S. Newell. The Century Co.

A very amusing and ingenious collection of reversible illustrations in color, accompanied with appropriate jingles, for the edification of juvenile readers. This is rather a novelty in the line of holiday publications, and will form a desirable Christmas gift to the youthful *protegé* of Santa Claus.

The indispensable servant is master of the situation.

"Tell me at what a man laughs, and I'll tell you what he is."—Goethe.

An ounce of keeping your mouth shut is worth a pound of explanation.—*Christmas Puck.*

MEDICAL EXPRESSION—"A COUNTER-IRRITANT."
—*Judge's Almanac.*

"Writer's cramp" is often found to extend as far below the wrist as the stomach.—*Christmas Puck.*

The average young woman does not object to a young man stealing something from under her very nose.

Elsie: Laura's health seems greatly improved.

Ada: Yes; she has heard that her doctor is engaged.—*Life.*

CHRISTENED.

Rev. Dr. Drinkwater: I'm glad to see you have no intoxicating beverages on the table. So many persons seem to think they can't enjoy the Thanksgiving turkey unless they have something to wash it down with.

Mrs. Terwilliger: I'm sorry to confess it, but my husband won this turkey at a raffle and he said that it was well washed down last night.—*Judge's Calendar.*

HIS REASONS.

"Still a bachelor, Winters?"

"Yes."

"Necessity or choice?"

"Both. My necessity, her choice."—*Christmas Puck.*

WHY, OF COURSE.

Stivets: The German investigators are experts in bacillus hunting, aren't they?

Whiffet: Well, wouldn't you naturally expect a germ-man to cholera microbe?—*North American Practitioner.*

Mathematical.

Schnapser (School Commissioner): Uf I buy meinselluf dree kegs of beer effery day vat vill I haf at der endt of one year?
Scholar: De kegs.

HER PREFERENCE.

"If I were to commit suicide," said young Mr. Spatts, "I should use prussic acid."

"And I," replied the artless maiden, "would select the poison found in ice cream—tyrotoxicon, I think they call it."—*Life.*

A SINGULAR REQUEST.

Family Physician: I can assure you, my dear lady, that you have not the least trace of a liver complaint.

Patient, who longs to go to Carlsbad: But, my dear doctor, can you provide me with it if I want it very badly? —*Fliegende Blaetter.*

The *Lancet* thinks that "the natural feminine tendency to give advice" is a strong argument against the development of women pharmacists. The editor of the *Lancet* appears to overlook the restraining influence of a pharmaceutical training on the proverbial loquacity of woman.—*Ex.*

Customer: Got a cure for headache?

Druggist: Yes; 10 grains of capitine.

Customer: Put me up 20 grains, then.

Druggist: It's two doses you want, eh?

Customer: No; one. It's for the two-headed boy at the dime show.—*Life.*

IT ANSWERS AS WELL.

"Boston girls never hang up their stockings on Christmas eve," announced Miss Kittish.

"Don't they?" replied Miss Giddey, in deep surprise.

"No; they suspend their hose."

"John McDuffy (charged with vagrancy), what can you say for yourself?"

"Not guilty, your honor."

"What is your business?"

"A professor of bacteriology."

"Ten dollars and twenty days. No visible means of support."—*American Analyst.*

Small boy to Waikato storekeeper: "Please, sir, mother wants a bottle of Holy Patrick medicine."

Overheard in an Auckland suburban store: "Have you any *Erysipelas* for curing colds?" Eucalyptus was meant.

Where there's a pill there's a way.—*Sharland's Journal.*

HE WOULD BE TEMPTED.

An editor, who does not mind a joke at his own expense, went into a chemist's shop recently and asked for some morphine. The assistant objected to give it without a prescription. "Why," asked the editor, "do I look like a man who would kill himself?"

"I don't know," said the assistant; "if I looked like you I should be tempted."—*Ex.*

IN THE MARKET.

Upson Downes (recovering from a severe illness): Before I get any better, I want you to arrange a little business matter for me.

Dr. Bismuth: What is it.

Upson Downes: The time has come for me to decide whether I am going to be "snatched from death" by somebody's little liver pills, or simply get well in the ordinary, prosaic way.—*Christmas Puck.*

THE KIND OF MAN HE IS.

"Quinine was never cheaper than it is now," remarked Mr. Bowersox as he laid down his newspaper. "It can be obtained in a wholesale way at twenty cents per ounce. Some years ago the price was in the neighborhood of a dollar."

"How do you know?" asked Mrs. Bowersox.

"Well, I ought to know if anybody ought. Many an ounce of quinine have I taken, for I was a terrible sufferer from ague in my younger days, I can tell you."

"Well, that's just like you exactly, Benjamin Franklin Bowersox."

"What is just like me?" asked Bowersox in some surprise, for his wife's tone was one of severity.

"Why, it was just like your extravagant nature to contract the ague when quinine was very expensive, and now that the drug is cheap enough to place the shakes within the reach of all you are as free from it as if there wasn't any such thing as malaria in the world. Benjamin Franklin Bowersox, if there is a more aggravating man than you on this footstool I wish some one would point him out to me. That's what I wish."

At this point the aggravating man put on his hat and went down-street.—*Judge's Almanac, '94.*

"ROUGE ET NOIR."—*Puck.*

HOW SMALL HE MUST HAVE FELT!

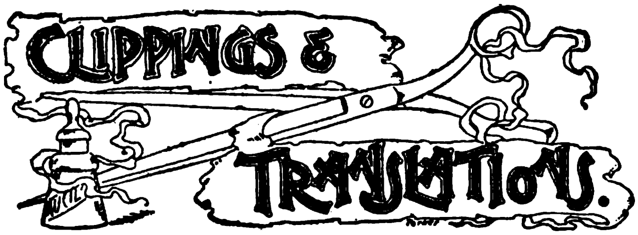
The Professor of Botany and Materia Medica in a certain college of pharmacy not many miles from Detroit, has long enjoyed an unusual popularity among his students on the double score of learning and dreaded wit.

He was recently the disgusted auditor of a stupid recitation delivered by a youth whose addiction to "ponies" was not less habitual than the weakness of the famous Mr. Bouncer.

"Young gentlemen," began the Professor gravely, "once and only once did I ever know a student to derive any profit from the disgraceful use of a 'pony.' The man in question was fond of hunting, and one day set out for the fields in quest of sport. A violent rainstorm overtook him, and casting about for shelter he could perceive only a large hollow log. Into it he crept, carefully shielding his precious gun from the moisture. His fatigue overcame him and he fell asleep, lulled by the monotonous dropping of the rain on the surface of the log. When he awoke he found to his horror that the water had penetrated the interstices of the wood, had swelled the log, thus constricting the hollow cavity and pinning him down beyond hope of egress.

"The imminent danger and the utter hopelessness of escape had upon him the effect that drowning exercises upon the struggling victim: the scenes of his past life thronged back upon his memory, and in a few moments he lived over the many chapters of his life. He bethought himself likewise of his wretched and mistaken courses at college and of the shabby shifts by which in cheating his instructors he had only robbed himself. And, gentlemen, he was so humiliated and *felt so small that he was able to crawl nimbly out of the hole in the log.*"

Tableau.



Robert Wilhelm Bunsen.

The value of a life devoted to original scientific work is measured by the new paths and new fields which such work opens out. In this respect the labors of Robert Wilhelm Bunsen stand second to those of no chemist of his time. Outwardly the existence of such a man, attached, as Bunsen has been from the first, exclusively to his science, seems to glide silently on without causes for excitement or stirring incident. His inward life, however, is, on the contrary, full of interest and of incidents of even a striking and exciting kind. The discovery of a fact which overthrows or remodels our ideas on a whole branch of science; the experimental proof of a general law hitherto unrecognized; the employment of a new and happy combination of known facts to effect an invention of general applicability and utility; these are the peaceful victories of the man of science which may well be thought to outweigh the high-sounding achievements of the more public professions.

Prof. Bunsen is eminently a soldier of science; his devotion to his flag has been unwavering and life-long, and his whole existence has been a noble struggle for the mastery of nature's secrets. Born on March 31, 1811, at Göttingen, where his father was professor of theology, Bunsen graduated in that ancient university before he had passed through his teens, and published an inaugural dissertation, "Enumeratio ac Descriptio Hygrometorum." Soon afterwards, at the age of 22, he became a privat-docent at the university of his native town, thus entering the career of a teacher, which he has consistently followed with conspicuous success for close on half a century. In 1836 Bunsen became professor of chemistry at the Polytechnic School in Cassel; in 1838 he was appointed to the chair of chemistry in the University of Marburg, where he remained for thirteen years; afterward he was for a short time at Breslau, whence he removed to Heidelberg, of which renowned university he has been one of the chief ornaments and attractions for the last thirty years.

Bunsen's first scientific investigation was one which attracted general attention, and the results of which are of permanent importance. In conjunction with Berthold, a colleague at Göttingen, he showed that moist, freshly precipitated ferric hydroxide acts as a certain antidote in cases of poisoning by arsenic, provided that it is exhibited in sufficient quantity and early enough in the history of the case. The explanation of this action is the formation of an insoluble ferrous arsenite; 100 parts of the dry hydroxide carry down from 5 to 6 parts of arsenic. So well known and valued is this antidote in Germany, that it is kept by apothecaries ready for use.

In 1835 Bunsen described some singular compounds which the double cyanides form with ammonia. He contradicted the general statement that ammonium ferrocyanide is formed by boiling Prussian blue with ammonia; but showed that it is formed by digesting lead ferrocyanide with ammonium carbonate. He also measured the angles of crystals of many of the double cyanides.

In 1837 he struck the first note of one of his most important and fruitful investigations in a memoir on the existence of arsenic as a constituent of organic bodies. In the year 1760 the French chemist Cadet had observed that a mixture of acetate of potash and white arsenic yields, when heated, a heavy brownish-red liquid, which has a frightful smell and fumes strongly in the air, and this liquid was termed Cadet's fuming arsenical liquid. Little more than the fact of its existence was ascertained concerning this body until Bunsen undertook its examination, and in a series of memoirs which have now become classical, and which extended over many years, placed its composition in a true light, thus giving to the world the first member of the now well known family of the organometallic bodies.

Taking a totally different direction, Bunsen's next important investigations were concerned with the examination of the chemical changes which occur in the blast-furnace. In 1838 he proved, by accurate analyses of the gases escaping, "that at least 42 per cent. of the heat evolved from the fuel employed is lost, and that in view of the ease with which such combustible gases can be collected and led off to a distance for subsequent use, a new and important source of economy in the iron manufacture is rendered possible." This research is, however, not only noteworthy as pointing the way to a method of economical working without which probably but few ironmasters at the present day could exist, but also as being the first experiment in which an accurate method of gas analysis was employed. This important branch of analytical chemistry has been created and brought to its present wonderful degree of precision solely by the head and hands of the Heidelberg experimental philosopher. Simplicity and accuracy constitute the rare merits of Bunsen's system of gaseous analysis. To have gone completely through his course of gas analytical manipulations, from the sealing-in of the platinum wires in the eudiometer to the absorption and explosion analyses of the Heidelberg coal-gas, under the eye and with the guiding help of the hand of the master, is in itself an experimental education of no mean order. But it is only on reference to his "Gasometric Methods" that we learn the general adaptability of this marvelously accurate system to all those numerous problems in which the analysis of a mixture of gases is required.

Next in order (1841) comes the invention of the Bunsen battery, an invention which has proved of the greatest practical value to mankind, inasmuch as this form of battery is now very largely used all over the world, not only as a scientific instrument, but also for ordinary telegraphic purposes. The chief point in this invention consists in the employment of carbon as the negative pole in place of copper or platinum. In his first communication on this subject, Bunsen accurately measures the absolute intensity of the current from his zinc-carbon battery, and compares it with that of a Grove (zinc-platinum) battery, invented a short time before by Sir William Grove.

To do justice to all the contributions with which Bunsen has enriched our science would fill several numbers of *Nature*, and as to many of them the writer must content himself with a mere cursory reference. One of his favorite and fruitful themes was the preparation by electrolysis of the rarer or more difficultly procurable metals. This is one of the purposes for which he employed his battery. Metallic magnesium was one of the first of his preparations of this kind, and in the description of this preparation his fertility of resource is clearly seen. Metallic magnesium in the molten state is specifically lighter than the fused mixture of salts from which it is obtained. Hence as soon as a globule of the metal is formed, it rises to the surface, and there takes fire and burns. To obviate this difficulty the carbon pole on which the metal was formed was serrated, and the metal on rising was caught below the surface of the fused salt in one of a series of small pockets, and thus prevented from burning.

The Bunsen battery has not only been of service in inorganic chemistry, but has thrown clear light upon the constitution of organic bodies. The classical researches of Kolbe on the electrolysis of acetic acid and the other fatty acids were carried out in the Marburg laboratory, and owe their inspiration to Bunsen. The subsequent equally important labors of Kolbe and Frankland, and those of the latter chemist alone, on the isolation of the organic radicals, have a like origin.

In the department of analytical chemistry how numerous and valuable have been his contributions!

There is scarcely one important problem in this domain which has not benefited from his extensive experience and keen insight. Bunsen's methods of silicate analysis, of mineral-water analysis, and a dozen other complicated laboratory processes, are simply perfect. Then his original method for the estimation of nitrogen in organic bodies will always be remembered as one of the most accurate of its kind when employed by an experimentalist as expert as Bunsen himself, but as most difficult and even dangerous in less able hands. Again, all chemists use and appreciate the much simpler methods for the estimation of nitrogen and sulphur admirably worked out by his pupils—Maxwell Simpson and Russell.

We all employ his beautiful general method of volumetric analysis, but chemists do not always remember that in this research Bunsen first determined the exact percentage composition of the higher oxide of cerium, a determination of the greatest scientific importance as regards the chemistry of the metals of the rare earths. Moreover, they may be apt to forget that Bunsen was the first to introduce a general method for the separation of these rare earths, by which he for the first time prepared pure yttria and erbia, and by which subsequently, in the hands of other chemists, many new metals have been discovered. His well known method of flame-reactions is a standard example worked out by every student. Again, modern chemists can now scarcely carry on the simplest experiment without using the "Bunsen gas-lamp," a burner which is also now employed in every household and in many manufactories, and has become so necessary that it is difficult to conceive how we worked before its invention. To him we are also indebted for the apparatus for accelerating filtration, the "Bunsen pump," together with all its appliances, now employed in every laboratory.

Of all the contributions to the advancement of our science, that by which the name of Bunsen has, however, become best known, and by virtue of which future generations will place him on the highest pinnacle of experimental fame, is the foundation, with his no less celebrated colleague Kirchhoff, of the science of spectrum analysis, and the discovery by its means of the two new alkali metals, cæsium and rubidium. It is true, of course, that many facts were ascertained and many observations made relating to the power possessed by matter in the state of incandescent gas of emitting rays of a peculiar and characteristic kind. Few great discoveries are made at one step. But the glory of having established a new branch of science, of having placed "analysis by spectrum observations" on a sound and firm experimental basis, belongs to the Heidelberg philosophers, and to them alone.

The history of the establishment of spectrum analysis, as that of its enormous recent developments, is too well known to the readers of *Nature* to require repetition. All that is necessary here is to recall the masterly way in which Bunsen worked out the properties and showed the relationships of the new metals and their compounds. He first saw the cæsium lines in a few millgrammes of the alkaline residue obtained in an analysis of the Dürkheim mineral waters, and the discovery of a second new metal (rubidium) soon followed that of the first. So certain was he of the truth of his spectroscopic test that he at once set to work to evaporate forty tons (44,000 kilos) of the water, and with 16.5 grammes of the mixed chlorides of the two new metals which he thus obtained he separated the one metal from the other (no easy task) and worked out completely their chemical relationship and analogies, so much so that the labors of subsequent experimenters have done little more than confirm and extend his observations. Such a result is truly a marvel of manipulative skill!

Another less widely known but no less interesting and important research, is that on the spark-spectra of the metals contained in cerite and other rare minerals. In this he shows his power both as physicist and chemist. He first describes a new chromic-acid battery suited to the performance of the special experiments which he afterwards details. He determines with great care all the physical constants of this battery, and then proceeds to investigate the spectra of the earths which give no color to the non-luminous flame. The spark-spectra of these earths he carefully maps—so completely, indeed, that the separation and identification of these metals now for the first time became possible.

In all the difficulties and perplexities by which experimental investigation is beset, the writer never knew Bunsen discouraged or at a loss for an expedient by which an obstacle could be overcome. Cheerful and self-reliant under the most depressing circumstances, he never gave up hope, and thus it was that intricate and difficult investigations were brought to a successful close.

The many hundreds of pupils who, during the last half-century, have been benefited by personal contact with Bunsen, will all agree that as a teacher he is without an equal. Those who enjoy his private friendship regard him with still warmer feelings of affectionate reverence. All feel that to have known Bunsen is to have known one of the truest and noblest-hearted of men.—*Nature.*

On a New Blowpipe Arrangement.

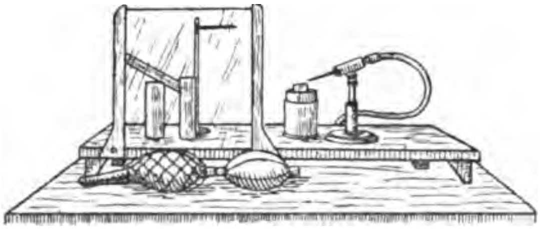
The blowpipe, of which an outline drawing is included here, consists of the usual fine platinum jet fastened to a brass tube, joined on to a sliding-rod inserted into a brass stand, by which means the jet may be inclined to any desired angle.

The air-blast is urged by means of one of the ordinary caoutchouc spray-producing bellows, which, in its turn, is attached to a piece of capillary lead-glass tube, over one end of which a piece of oiled silk is tightly tied, thus forming a valve that only opens inwards and prevents any back-flow of air. The valve is passed through a cork and inserted into the inlet of an air-tight chamber, made of tin plate, and measuring 10 in. by 8 in. by 1 in. This air-chamber is placed out of sight by screwing on to the under-side of the blowpipe-table, which measures 18 in. by 10 in. and stands on four legs 1½ inches high.

To the left of the front is an upright frame made to hold a sheet of glass six inches square; into the groove made in the frame, ruby, violet, green, or colorless glasses may be inserted as wanted. At a point 2 inches from the left edge is a brass rod 6 inches high, which serves to hold a glass tube bearing a fine platinum wire for flame-reactions.

The lamp may be any one of the many varieties of paraffin or grease lamps having a flat wick. In my own case I employ the lamp found in Fletcher's blowpipe outfit, using solid paraffin as fuel. On the extreme left, just midway across the board is a brass plate, 2 in. by 1 in., hard-soldered on to a universal joint (not shown in the sketch).

This forms a convenient support, when protected by a piece of asbestos millboard, for charcoal pellets or cubes as well as for the plaster slabs and aluminium plates. The upright prism of porcelain is used for cupelling.



On the right is imbedded into the table a flat steel anvil and an agate mortar. Such a blowpipe becomes a valuable adjunct to the laboratory equipment, and instead of the blowpipe being despised and consigned to the drawers or box of odds and ends, it finds a useful place on the working-bench. With such a piece of apparatus one can get a very clearly defined reduction or oxidation flame, and when the jet slopes down on to the wick at the proper angle it is easy to produce a flame four inches long, and so steady that I have actually cupelled off a lead button as perfectly as it could have been done in the muffle. Such a thing is sometimes stated in books, but I never saw it accomplished until I actually did it myself with the apparatus I now describe.

Using the flame coloration and a violet screen, it is quite possible to see the potassium flame amid the abundance of sodium salts in urine. Conversely, the presence of sodium salts in potassium compounds may be recognized by using the green-tinted screen.

Altogether it is the most efficient and the most easily handled blowpipe arrangement I know of, and I made good use of it during my visit to the Broken Hill silver-lead mines. With the steady flame obtained, Von Kobell's reaction for bismuth compounds gives most brilliant results on a slab of plaster-of-paris, and with dry thio-sulphate all the reactions may be instantly obtained in the dry way that are usually given in the wet way with sulphuretted hydrogen.—Wm. M. Hamlet, F.I.C., Govt. Analyst N. S. W., in *Chemist and Druggist.*

The Largest Pharmacy in the World.

Some years ago we gave a few brief particulars of Mr. K. J. Ferrein's pharmacy in Moscow, which is believed to dispense more prescriptions daily than any other pharmacy on the face of the earth; and we are now glad to supplement those notes by some fuller particulars of this remarkable establishment.

Ferrein's pharmacy, with which is connected a large wholesale druggists' and manufacturing chemists' business, is situated in a comparatively narrow but exceedingly busy thoroughfare, known as the Nikolskaia, leading off the Krassnaia Ploschtschadj, or Red Square. The business was founded by the late Mr. Karl Ivanovitch Ferrein, a native of Arnswalde, in Prussia, where he was born on Nov. 19, 1802. At the age of 14 young Ferrein came to St. Petersburg, and was there apprenticed to a pharmacist. After passing his first examination in the Russian capital, Ferrein transferred his services to a Moscow pharmacy, and in due time took the degree of a pharmacist of the first class. In 1832 he purchased the shop which formed the nucleus of the gigantic business of to-day, to which he gave the name of "Staronikolskaia Pharmacy," which it still bears. The situation of the shop was an exceedingly favorable one, the neighborhood being the "city" part of Moscow, while the theatre district is also close at hand. From the first Mr. Ferrein obtained a reputation for absolute accuracy and care in dispensing, and for the general excellence of his goods. Mr. K. J. Ferrein devoted his life to the building-up of his business, and always took a keen interest in all the affairs of his craft. He died of heart disease at Innsbruck, in the Tyrol, in August, 1887, while on a holiday journey, and the proprietorship of the business then devolved upon his two sons—Mr. Vladimir Karlovitch, a pharmacist of the first class, who had managed the business since 1871, and Mr. Andrei Karlovitch, a practical chemist.

The pharmacy is situated upon the first floor of the building, the dispensing-room being to the right, and the room for sale over the counter to the left, of the main staircase. In the first-named apartment from eighteen to twenty assistants and apprentices are engaged all day long in receiving and entering prescriptions and delivering the goods when ready. The dispensing itself is done in a glass-roofed room, behind this apartment, by another staff of from twenty-four to twenty-eight apothekers. If a prescription contains poisonous ingredients, these are always handed to the compounder, and the weights checked specially by one of two apothekers appointed only for that purpose. Every prescription, after being compounded, is submitted to chemical examination, in order to check its accuracy and efficiency; and, as it frequently occurs that over 1,200 prescriptions are dispensed in a single day, the large staff do not usually find time hang heavily upon their hands.

Through an apartment devoted to the use of the assistants the "coctorium" is reached. For the sake of cleanliness the walls and floor, and, so far as possible, fittings, of this room are in white marble. The number of assistants employed in the room for sales over the counter is ten. At the back of this room is the partners' private office, containing, besides a choice scientific library, a fine materia medica collection. A staff of twenty men and boys, under the control of two apothekers, are employed in the adjoining store-rooms. Further on is the office in which one man (a qualified chemist) is specially engaged in entering the day's prescriptions in special registers for the control of the medical authorities. Five such registers, measuring 14 by 20 centimeters, and containing 800 pages each, are filled every year.

The upper stories contain the employés' dwelling and dining-rooms, large store-rooms, and immense drying-floors for the preparation and storage of medicinal herbs. On the ground floor are the pharmaceutical and the chemico-analytical laboratories.

The entire building is lighted by electricity. The average number of prescriptions dispensed annually is 300,000, and the total takings for these are 360,000 roubles [about $285,000]. The firm employs 123 pharmacists, of whom 35 are engaged in the wholesale branch, and 170 warehousemen, boys, etc., of whom 91 are engaged in the wholesale department.—*Chemist and Druggist.*

Ipomœin.

Under the direction of Dragendorff, Mag. Nicolai Kromer has recently completed a very thorough study of *Convolvulus panduratus*, L., or *Ipomœa pandurata*, M. The drug employed was furnished to Prof. Dragendorff by Parke, Davis & Co.; the investigation deals with the chemical behavior of the glucoside ipomœin; and the conclusions reached are presented in the following summary:

1. The root of *Convolvulus panduratus*, L., contains a glucoside insoluble in ether, which differs in character from the familiar Convolvulaceæ glucosides, and for which I propose the name *ipomœin.*

2. The ipomœin is disintegrated by the action of bases into a volatile acid of the formula $C_5H_8O_2$ (β-methylcrotonic acid?) and ipœinic acid.

$$C_{78}H_{132}O_{36}+2Ba(OH)_2=(C_5H_7O_2)_2Ba+(C_{34}H_{61}O_{18})_2Ba.$$

3. Ipœinic acid is monobasic and possesses the character of a glucosidic acid.

4. Mineral acids disintegrate ipœinic acid into ipomeolic acid and sugar. The ipomœin is thus resolved into ipomeolic acid, sugar, and a volatile acid of the formula $C_5H_8O_2$ (β-methylcrotonic acid?).

5. Ipomeolic acid is monobasic, of the composition $C_{16}H_{32}O_3$.

6. Nitric acid oxidizes the ipomœin into a sebacic acid with melting-point at 98.6° and into a valerianic acid ($C_5H_{10}O_2$).

The Detroit Controversy Again.

The recent insulting attacks of the *Shipping List* and *Pharmaceutical Era* upon the honesty and integrity of the members of the National Wholesale Druggists' Association culminated with the statement in the *Era* as follows:

> Parke, Davis & Co. also insinuate that the reason why the *Era* has seen fit to expose their methods is because they do not patronize the advertising pages of this publication.
>
> P., D. & Co. had a contract with this paper some years ago, and when it expired they were informed that if they wished to renew we should have to charge them a 50 per cent. advance in rate. This is a polite way which publishers sometimes have of telling a firm that they do not care for their business. We have since been approached by members of that Company several times and given to understand that we could have an advertisement for the asking of it; but we have distinctly declined their business, and they know very well that we do not solicit or desire their patronage.

In order to ascertain what the head of the house of Parke, Davis & Company would have to say upon this subject, a representative of the *Reporter* recently interviewed Mr. George S. Davis, the general manager, and he makes the following statement in the most positive manner: "We discontinued our advertisement in the *Era* because we found it was not a profitable investment. It is not true that the *Era* has been approached by any member of our Company, authorized either directly or indirectly to engage advertising space, or to carry the impression that the *Era* could have our patronage if they asked for it. While it is possible that the employés of our house in conversation may have hinted that such was the case, we have to say positively that no authority or suggestion has been given to any person or persons whatsoever to approach the *Era* for the above purpose, and we have further to say that under no circumstances would we have given our patronage, since the first year of the publication of the *Era*, after the uncourteous treatment we have received at the hands of the editor of that paper."

It will be seen by the above that the whole attack by the *Shipping List* and *Era*, with the intention of bringing disgrace and dishonor upon members of the N. W. D. A., which so completely failed, was more or less based on the fact that a prominent house for good business reasons refuses to advertise in those papers.

The moral of this story would seem to be that before attacking the motives and honor of the whole drug trade of the country, a publication ought to have a little truth as the foundation for its charges. In this case there appears to be nothing more than humbug and deception, prompted by the business jealousy of one inconspicuous house.—*Oil, Paint and Drug Reporter.*

Chemical Synonyms for New Remedies.

Supplementing the table of new remedies and their chemical synonyms published in the November BULLETIN, we add the following from the very complete list contained in the second (enlarged) edition of Prof. Kobert's admirable work, "Compendium der Arzneiverordnungslehre" (Ferdinand Enke, Stuttgart, 1893):

Alumnol: Naphtholsulfonate of aluminium.

Analgen: Ortho-æthoxy-monobenzoylamidochinolin.

Angioneurosin: Nitroglycerin.

Antifebrin: Acetanilid.

Antinervin: Mixture of acetanilid, ammonium bromide, and salicylic acid.

Asaprol: Beta-naphthol-monosulfonate of calcium.

Bromopyrin: Mixture of caffeine, antipyrin, and sodium bromide.

Cancroïn: Solution of citronate of neurin and phenol.

Cannabinon: Soft resin from *Cannabis Indica.*

Chlorobrom: Solution of 6 parts bromide of potash and 6 parts chloralamid in 58 parts of water.

Creolin: Mixture of cresolsulphuric acid with tar-hydrocarbons.

Cresolin: Creolin-like mixture.

Eulyptol: Mixture of 6 parts salicylic acid, 1 part phenol, and 1 part eucalyptus oil.

Europhen: Isobutyl-orthocresol-iodide.

Formalin: 40-per-cent. solution of formaldehyde.

Gallanol: Anilid of pyrogallic acid.

Gallol: Impure Gallanol.

Hæmatogen Hommel: A blood preparation with no similarity to the hæmatogene of chemistry.

Hopeïn: A swindle mixture of morphine, cocaine, etc.

Keratin: Purified horn-substance.

Kresin: Solution of cresol in cresolacetate of sodium.

Lipanin: Mixture of olive oil with 6 per cent. free oleic acid.

Lysol: Liquid containing cresol with soap.

Myrrholin: Solution of resin of myrrh in castor oil.

Salophen: Salicylate of acet-par-amido-phenyl-æther.

Saprol: Mixture of crude cresols with carbonates.

Solveol: Cresol rendered soluble with cresotinate of sodium.

Somnal: Alcoholic solution of chloralurethane.

Sulfonal: Diæthyl-sulfon-dimethyl-methane.

Tetronal: Diæthyl-sulfon-diæthyl-methane.

Thiol: Sulphuretted unsaturated hydrocarbons of the lignite-tar oils rendered soluble with sulphuric acid.

Trional: Diæthyl-sulfon-æthyl-methyl-methane.

Malakin, a New Antipyretic.

The *Schweiz. Korrespondenzbl.*, 1893, No. 18, contains the following notice: "Malakin, a new antipyretic, has been tested by Dr. A. Jaquet in the medical clinic at Basel. This substance is allied to phenacetin, and represents a combination of phenetedin with salicylic acid. It is insoluble in water, soluble with difficulty in cold, and tolerably soluble in hot, alcohol; insoluble in the carbonates of alkalies, but soluble in caustic soda under formation of a sodium combination. Despite its insolubility the agent is absorbed with comparative rapidity in the stomach, being split up into salicyl-aldehyde and phenetedin by weak mineral acid, and after the lapse of only twenty minutes the salicylic reaction supervenes in the urine. The result is accordingly that of salicylic acid, since the salicyl-aldehyde is transformed in the tissues into salicylic acid. The single dose is one gramme; the daily dose, four to six grammes. The administration, etc., etc."—and then follows a description of the virtues of the remedy, with the usual assurance that there are never any unpleasant after-effects. At the close we read: "Unfortunate is the choice of the name 'Malakin' (in allusion to the mild action), instead of some other term abbreviated yet indicating sufficiently the chemical constitution."

We believe that we are in position to enlighten the *Schweiz. Korrespondenzblatt* respecting the grounds of this christening. Salicyl-phenetedin was formerly termed "Saliphen"—a name which perhaps did not suit the fancy of the "inventor" of malakin. It is, of course, always delightful to meet an old acquaintance even if his "name and style" has been metamorphosed. *But what is most remarkable is the fact that the salicyl-phenetedin was quite inert while it was still termed Saliphen, whereas under the name of Malakin it exhibits a most excellent though retarded action.* Further information on the subject will be found in the following numbers of the *Apotheker-Zeitung:* 1891, No. 98, p. 675; 1892, No. 27, p. 171; *Repertorium of the Apotheker-Zeitung*, 1891, No. 1, p. 4. —*Apotheker-Zeitung.*

Detective Photography.

Reports have appeared from time to time on the employment of photography for the detection of crime. An official chemist in Berlin, Dr. Jeserich, to whom we owe the elaboration of these methods of investigation, has recently made a new contribution to the art.

Some time ago the postal authorities delivered a money letter which was to contain four hundred marks in the form of bank notes. On opening the envelope, the recipient found that it contained brown wrapping-paper instead of the bank notes. Inspection of the envelope showed that it had been opened on one side with a knife, and had been very skillfully sealed by inserting a white strip of paper which had been split longitudinally and gummed on two sides. Jeserich established the fact, first, that the address on the letter was not written until after attaching the gummed paper strip, for the ink had diffused itself in the folds caused by the presence of the paste. On the wrapping-paper which was found in the envelope, nothing special could be observed by the naked eye or even with the aid of a lens. Jeserich photographed the enclosure, and the photograph developed distinctly the impression of the stamping machine employed in the postoffice at Wilhelmshaven, with which the postage stamps on the envelope are canceled.

Metric Weights and Measures.

The metric system of weights and measures has the unequivocal indorsement of every civilized nation, and there can be no more fitting time for its adoption than now. It is almost inconceivable that a people as quick as ours to comprehend and adopt all useful novelties should persist in struggling with the incongruities and inconsistencies of our present system of weights and measures. Months if not years are required to master those arbitrary and complex methods, which appeal to nothing but the effort of memory. A few hours would suffice to acquire a knowledge of the entire metric system. It offers, in absolute simplicity of form, a logical and unbroken chain of connection among all manner of weights, measures, and moneys, the basis of the most important intercourse of human society.—President Frick, of the Baltimore Board of Trade.

Permanent Syrup of Ipecac.

Mr. Geo. J. Geiger writes that the following formula yields an ipecac syrup that will keep a long time:

Fluid extract of ipecac	℥ ss (15 c.c.)
Loaf sugar......................	℥ viij (250 Gm.)
Pure water..........q.s. to make	℥ viij (237 c.c.)

Mix the fluid extract with 3½ oz. (104 c.c.) water, shake well, and filter. Put the sugar into a percolator, add the filtrate, and percolate—adding enough water to make half a pint (237 c.c.). —*Merck's Report.*

Purification of Fixed Oils.

When fixed oils, like olive, peanut, benne, or cottonseed oil, possess a disagreeable taste, they are sometimes purified by mixing with a weak alkali, then adding a dioxide like manganese or barium dioxide, which readily evolves oxygen, the amount depending on the oil, incorporating the whole thoroughly for ten or fifteen minutes, then setting aside for two hours, when the whole is saturated with carbon dioxide, and at the end of twenty-four hours the oil is decanted and filtered.—*Drog. Ztg.*

Copaiba Balsam as a Diuretic.—S. Bronowski used this remedy in six cases—three of hepatic cirrhosis, one of cardiac insufficiency complicated with cirrhosis, one of hepatic cancer, and one of pleural effusion and apical tuberculosis. He found the best form of administration to be by an emulsion of 8 grammes (2 drachms) of copaiba to 180. The patients bore 6 grammes (1½ drachms) daily without bad effects. Tincture of peppermint was used to disguise the disagreeable taste. He found it to be entirely satisfactory as a diuretic.—*Gazeta Lekarska*, No. 29, 1893.

An accidental personal observation of Dr. A. Hecht has attracted his attention to the value of the ischæmial action of cocaine solutions in otiatrics. A deafness following symptoms of slight nicotine poisoning was diagnosed by the author as due to the hyperæmia of the drum of the ear. It resisted all therapeutical treatment with ice-bags and laxatives, painting with iodine, and the instillation of astringents into the aural cavities. On the fifth day a lukewarm 5-per-cent. solution of cocaine hydrochloride was dropped in; in about eight minutes the sense of hearing was to a great extent recovered, and soon became normal.—*Exchange*.

Kola.—Reporting officially on the botany of Sierra Leone (*Medical Times and Hospital Gazette*), Mr. C. F. Elliott declares one kola nut, or even half a nut, will enable a man to dispense with food and to support great fatigue for twenty-four hours or more. It is an excellent nerve tonic, and is especially desirable for keeping the brain clear and active at night; it should not be taken less than four hours before retiring, as it prevents sleep.

Another property not understood is that of rapidly clearing foul water and impure beer.

The unsteadiness and stupidity due to drunkenness are said to vanish quickly after its use.

A certain New York pharmacy affords an example which might profitably be followed by all others in which such precautionary measures are not already in vogue. All the poisons in the store are kept in a single closet with no other medicines, and whenever this closet is opened an alarm is set ringing. This alarm never stops so long as the closet is open. The result is that an absent-minded attendant cannot easily make the mistake of using a poison for a harmless drug, and the closet is not likely to be left open long to the hands of possible meddlers. The dispensary is supplied with half-a-dozen other ingenious devices designed to promote safety, precision, and convenience.—*New England Druggist*.

Spontaneous Ignition of Lupulin.—The spontaneous ignition of lupulin is reported from Bremen. On one of the trans-Atlantic steamers just about ready to sail, smoke was seen to issue from a box; upon opening, to see the cause, the material, lupulin, burst into flames. The lupulin had been sent from some part of Bavaria, and was to be shipped to this country. The unconsumed portion was found to be thoroughly caked, due to the presence of moisture, and thus furnishes the cause of the ignition: A material rich in oil; moisture; large quantity; and considerable time of storage by which the heat generated by the slow oxidation of the oil was so much increased that it reached the ignition temperature.—*Suda Apotheker Ztg*.

Hypnotic Humbug.—The interesting experiments performed by Krafft-Ebing before the Vienna Society of Psychiatry and Hypnotics have not proved particularly gratifying to the auditors. Krafft-Ebing hypnotized a certain Miss P—— and transferred her successively back to the ages of 7, 15, and 19, showing that she spoke, behaved, and wrote in a way corresponding to the age which she imagined herself to be. The people witnessing the experiments proved skeptical, and Prof. Benedict declared emphatically "the whole thing is a swindle." In Paris and Berlin the Vienna experiments called forth much incredulity. The opinion seems to be pretty general that Krafft-Ebing has been made the victim of a cleverly perpetrated deception—perhaps by no means the first.—*Edinburgh University Medical Journal*.

Hot-Water Drinking.—There are four classes of persons who should not drink large quantities of hot water. These are as follows:

1. People who have irritability of the heart. Hot water will cause palpitation of the heart in such cases.
2. Persons with dilated stomachs.
3. Persons afflicted with "sour stomach."
4. Persons who have soreness of the stomach, or pain induced by light pressure.

These rules are not for those who take hot water simply to relieve thirst, but as a means of washing out the stomach. Hot water will relieve thirst better than cold water, and for that purpose is not to be condemned. But hot water is an excitant, and in cases in which irritation of the stomach exists should be avoided.—*Medical Compend*.

Varying Standards for Tinctures in Canada and the United States.—The *Montreal Pharmaceutical Journal* makes allusion to a subject which may assume considerable importance in connection with some very potent preparations, the strength of which is made by our Canadian neighbors to conform to the British Pharmacopœia. Thus, our tincture of aconite contains one part of substance in two and a half of menstruum, while the British contains but one in eight. The tinctures of belladonna, cannabis, digitalis, and lobelia vary radically, in accordance with different standards, and variations will likewise be found in a number of other preparations. The result is that Americans traveling in Canada, and Canadians traveling in this country, as both frequently do, are exposed to a certain risk. We should be thankful that serious accidents are not of frequent occurrence, as they doubtless would be were it not for the watchful caution of pharmacists in rectifying the errors of those not familiar with the disparity prevailing between the pharmacopœial standards.

THE INFLUENCE OF LIGHT UPON BACTERIA.—Buchner has investigated the effect of light upon bacteria suspended in water. For the purposes of experiment the typhoid bacillus, bacillus coli communis, bacillus pyocyaneus, cholera vibrio, and various bacteria of putrefaction were employed. It was ascertained that light had a powerful disinfecting influence upon water containing these organisms. From water in which bacilli coli were present in the proportion of about 100,000 to a cubic centimeter no growth could be obtained upon plate cultures after exposure of the water to direct sunlight for one hour. Diffuse daylight has also this disinfecting power, though naturally in less degree. Light has not a detrimental influence upon all bacteria capable of living in water. Some even multiply under its action. Buchner has himself observed such; they could not, however, be grown upon nutrient gelatin, and probably were pure-water bacteria, harmless from a hygienic point of view. Light must be considered the most powerful agent in the purification of rivers and lakes containing organisms harmful to man, such as the bacilli of typhoid and cholera.—*Centralb. f. Bakt.*

IMPROVEMENT IN THERMOMETERS.—Mr. Lupin, of Munich, has recently called attention to two thermometers that are free from certain inconveniences that are presented by those filled with alcohol. One of them is obtained with sulphuric acid diluted with water. According to the experiments of Sohncke, the quantity of water abstracted by distillation in the thermometric tube is trifling, even when the free extremity is surrounded with ice, and, what is still more important, this small quantity of water is reabsorbed in a short time. The expansion of the liquid column is nearly constant. Mr. Vogel made use of this apparatus in the course of an expedition in Brazil, and obtained very satisfactory results with it.

The other liquid is a solution of chloride of calcium in spirits of wine (10 to 15 per cent. of the anhydrous salt is the best proportion). This is especially recommended for medical uses on account of its pronounced color, which facilitates readings. It gives no rise to error, either, in consequence of distillation, and, besides, presents the advantage of taking the temperature of the body very rapidly, say in about three minutes. The regularity of expansion, although less perfect than with sulphuric acid, is satisfactory between 0° and 50° C.

These two solutions do not solidify, even at the temperature of evaporation of snowy carbonic acid, and, with the proportion of salt indicated, there is no deposit in the reservoir.—*Revue Scientifique—Canadian Druggist.*

Dr. Kunz-Krause, of the University of Lausanne, publishes in the *Archiv der Pharmacie* a very elaborate study of *Ilex paraguayensis* (Maté) and its chemical constituents. The following is a brief summary of his conclusions:

1. Maté contains—in addition to the protein substances, tannic acid, and other bodies which are present in slight proportion—the following constituents:
   (*a*) Cholin in combination.
   (*b*) A sugar which reduces, but does not deviate, the ray of polarized light, as a disintegration product of the tannic acid.
   (*c*) Considerable quantities of potassium and magnesium salts soluble in water.
2. Maté is free from ilixanthin.
3. The tannic acid present in Maté, as stated by Rochleder, is identical with the tannic acid of coffee, for on splitting up it yields the same dioxycinnamic acid as does the coffee.
4. The dioxycinnamic acid obtained as a disintegration product is capable of forming with bivalent metals neutral, monobasic, and dibasic salts, and on moderated oxidation with nitric acid containing nitrous acid it yields oxalic acid and hydrocyanic acid, besides brenzkatechin.
5. It displays a behavior analogous to the other aromatic oxy-acids, losing at 200° its carboxyl-group as CO_2, whereupon m-p-dioxystyrol is developed as a product of reaction.
6. The latter corresponds in properties and reactions with its monomethylether—the hesperetol.

GERMAN SUBSTITUTES FOR OLIVE OIL.—Alfred C. Johnson, U. S. Consul at Stuttgart, reports that on account of the great expense and difficulty in procuring pure olive oil for table purposes, there have been many attempts made in Germany to produce from other substances than the olive an oil which, having all the qualities that recommend the olive oil, could be sold at a lower price.

In southern Germany for some years past, oil has been produced from the beechnut. It has given great satisfaction, but has not come into general use because the production has been small and the oil has never been pushed on the market. One reason why more has not been done in the production of this beechnut oil has been the great scarcity of the nut in certain years.

The beechnut contains but 22.77 per cent. of oil; but when the nuts are plentiful, the ease with which they can be gathered, the fact that there is absolutely no other expense except the pressing, and the good prices that have been received for the oil, have made the production of the oil very profitable.

It is only of late that the seeds of the linden tree have been used for the production of oil. According to the report of Dr. C. Müller to the German Botanical Society, this oil has a number of excellent qualities, which would appear to make it certain that the linden seed will hereafter be considered one of the principal sources for obtaining table oil. The linden tree is a regular bearer, so that a large quantity of seed may be counted upon each autumn. The percentage of oil in the linden seed is given at 58. It is maintained that the oil has a peculiarly fine flavor—free from all bitter or aromatic taste—and that it has the appearance of olive oil. It belongs also to the oils which do not evaporate.

Oil made from linden seed will never become rancid.

It has no tendency to oxygenate. It will stand a great degree of cold without freezing. Dr. Müller has exposed it to a temperature of three degrees below zero (Fahrenheit) without being able to notice any change.

THE PRODUCTION OF PRUSSIC ACID FROM SUGAR.—The conversion of an absolutely innocuous substance into one of a powerfully toxic nature by means of a series of simple chemical operations, though not a rare phenomenon, is well illustrated in a reaction recently observed by three chemists—Messrs. Burls, Evans, and Desch—in which prussic acid proved to be one of the products of the action of nitric acid upon sugar. It is well known that by acting upon sugar, sawdust, or cellulose with nitric acid, oxalic acid in tolerable quantity is produced. In the course of such an experiment the chemists above named noticed the smell of prussic acid just after the first violence of the reaction had ceased and the evolution of nitrous fumes had diminished. Subsequent examination proved beyond doubt that prussic acid in considerable quantity was present in the liquid, and on submitting the liquid to distillation, prussic acid was found in the condensed products. A larger yield of the acid was obtained when the nitric acid was allowed to drop slowly into the sugar solution from a tap funnel. Caramel was acted upon similarly, although the quantity of prussic acid produced was less than before. The production of hydrocyanic acid would appear to be due to the reduction of the nitric acid to nitrous acid and to the action of this acid upon the carbon ensuing on the decomposition of the sugar. Finely divided carbon itself was found to give prussic acid on distillation after treatment with nitric acid, and the same result was obtained when cane sugar was acted upon by nitrous acid by submitting the sugar first to the action of nitrite of potassium and then acidulating with sulphuric acid. On this hypothesis the reaction may be thus represented: $2HNO_3+C=2HNO_2+CO_2$ and $HNO_2+2C=HCN+CO_2$. This action is evidently of interest from a theoretical point of view, and only shows how we may be led astray in being content with the simplest explanation of certain phenomena. The text-books give oxalic acid as the product of the action of nitric acid upon sugar, but now must be added the observation that hydrocyanic acid is a compound simultaneously produced.—*The Lancet.*

RUBIDIUM IODIDE.—It has been claimed that rubidium salts have the same therapeutic effect as those of potassium, without possessing the disturbing influence of the latter, but a bar to their general employment has been the difficulty of producing them in a sufficiently pure condition. It is stated that this difficulty has now been removed by the new process of Dr. E. Erdmann for the recovery of rubidium salts from the Stassfurth potash deposits, and that the preparation of rubidium iodide on a large scale has been undertaken. This compound forms white, non-efflorescent crystals, which are odorless and of milder taste than the corresponding potassium salt. It is also more readily dissolved by water than the latter, and has been administered internally in 2½-per-cent. solution, externally in drops containing 5 per cent., and in ointment of the same strength with soft paraffin as a basis. If the statements made by various professors and practicing physicians, regarding the action of the salt, should be confirmed, further proof will be afforded of the connection supposed to exist between physiological action and physical and chemical characters. If potassium salts owe their more prompt action, as compared with sodium salts, to their higher molecular weight and greater electrolytic conductivity, rubidium salts may naturally be expected to take a higher position on similar grounds. Whilst the molecular weights of the three elements are: Sodium, 23; potassium, 39; rubidium, 85.4, the electrical conductivity of their iodides shows a similar ascending progression thus:

Dilution.	Sodium Iodide.	Potassium Iodide.	Rubidium Iodide.
d=32	105.7	128.5	130.6
d=1024	119.1	140.7	144.3

and these data are said not only to "represent the actual and relative rapidity with which the different iodides are distributed throughout the organism, under the influence of osmotic pressure and electrical currents, but they also afford a direct measure of their degree of medicinal activity, for physiological activity is occasioned by ability to enter into chemical reactions, and, according to the new general law discovered by Ostwald, chemical activity is proportional to electrolytic conductivity."—*Therapist*, iii, 89.

THE COLORING OF FOODS.—Prof. Tschirch spoke on the question: "May Articles of Food and Luxury be Colored, and Wherewith?" He proceeded from the principle that poison is everything "partaken of in excess." Whereas, with the poisons, this excess, in the narrower sense of the word, is reached at a comparatively small dose, such dose is comparatively high with the so-called harmless substances. There are no absolutely harmless substances, nor are there any absolutely poisonous. Whence we may deduce the principle that no objection is to be made to the employment of poisons (in the narrower sense) in the manufacture of articles of luxury, especially of those which it is not customary to partake of regularly, so long as a dose injurious to health is not attained. And as a matter of fact no exception has been taken in any quarter to the use of cherry-water containing hydrocyanic acid, or of nux-vomica bitters containing strychnine, and others. But the question is complicated by the fact that there are certain substances which in small doses exert no injurious action and produce no acute toxic symptoms, but which, when partaken of regularly, may produce chronic intoxications through their cumulative action: lead, for example. Hence in deciding whether or not a substance is noxious or, indeed, toxic, we must not only consider whether it is capable of producing an acute intoxication, but also the possibility of chronic poisoning. Accordingly the above principle must be modified so as to assert that, in products of food or luxury, only those articles may be employed as coloring agents, for instance, which in the proportions chosen are capable of producing neither acute nor chronic toxicity. (Minimal dose.) If it be shown by experiments on animals and human beings that neither form of intoxication supervenes, nothing can be urged theoretically against the employment of the article as a coloring agent. Thus the hygiene of the art of coloring articles of food and luxury is placed on a secure foundation: quantitative relations and animal experiment. In place of general arguments and considerations, we have a definite number, and the statistics of the experiments impart a firm, secure support to this number. In practice, however, the matter is somewhat different. Here we encounter the following points: First the question: Is the coloring prompted by an attempt to swindle—is a deception intended? In such case the action is to be forbidden on legal grounds, as, for example, with wines. Is the coloring superfluous? In this connection each individual case must be tested. If the appearance is improved by coloring, and if unsightly foods and beverages are made to assume a beautiful tint, the product will be partaken of more readily on æsthetic grounds and be better digested. In this view the coloring is not actually useless. It must further be considered whether the manuacture affords a sufficient guaranty that the permissible dose will not be exceeded through heedlessness while concealing the external evidences of excess. And finally, proper weight must be given to the query: Is the industry injured by forbidding a theoretically unobjectionable coloring agent (cupric salts, for example)? The right of custom—*usance*—must not be altogether overlooked, difficult as it may be to define the precise limits of this term. It goes without saying, also, that a certain caution with respect to all suspicious substances is fitting. Thus we perceive that, simple as the question may appear from a purely theoretical point of view, so complicated is it in practice that each single case must be scrutinized by itself.

Guided by these considerations, the speaker has thoroughly tested two modes of coloring articles of luxury, which prevail at the present time: The use of tar-dyes for the coloring of bonbons, drops, liqueurs, etc., and of copper salts in the "reverdissage" of green conserves (peas, beans), as also in the manipulation of wines.

With respect to tar-dyes the following assertions may be made:

1. The tar-dyes and the anilin dyes (in the narrower sense) are no longer injurious through their content of arsenic, since in the great majority of cases they are now produced devoid of arsenic.

2. Several tar-dyes have proven, as such, to be injurious to the organism.

3. The general use of tar-dyes for coloring articles of luxury should be permitted, but those established as injurious should be expressly and specifically forbidden.

4. The amount of tar-dye quantitatively determined to exist in bonbons and liqueurs is so slight that even those established as injurious are no longer capable of exerting injurious action.

With respect to the employment of cupric salts, the speaker maintains:

1. In a certain dose and applied in a certain manner, copper is a poison to animals and is injurious to man. The dose which will produce no disturbance in the health of man, not even mild diarrhœa, is about 0.05 gramme *pro die.*

2. Larger doses are usually expelled by vomiting, or first cause diarrhœa, then the typical tableau of acute cupric poisoning; smaller doses, even when administered steadily for months, are devoid of action on the organism. Thus far no facts have been found to support the theory that there is such a thing as chronic cupric intoxication or "industrial cupric poisoning."

3. The animal organism is affected by all copper combinations, with approximate equality of potency, when the copper oxide is estimated, without regard to whether they are readily soluble or insoluble in water or hydrochloric acid. The cupric salt most readily soluble in water—the double salt of copper and sodium tartrate —exerts an action similar to that of cupric phyllocyanate, which is insoluble in hydrochloric acid.

4. Since the green conserves become unsightly and brown on boiling or sterilizing, they have long been subjected to the process of "reverdissage," so-called (literally, "re-greening") by treatment with cupric salts or by heating in copper kettles. Besides combinations of the leguminates, there is thus developed a combination of chlorophyll with copper—the cupric phyllocyanate. To produce this very permanent and beautiful pure green combination is the purpose of reverdissage.

5. To be able to determine the ultimate noxiousness of reverdissage, we must first of all make experiments on animals with cupric phyllocyanate. Such experiments performed by the speaker conjointly with Prof. Demme, have shown that the dose of cupric phyllocyanate which fails to produce any symptoms whatsoever of intoxication in animals lies between 0.009 and 0.035 gramme daily per kilo of body-weight. Guided by this pharmacological experience, as well as by the results of his experiments on human beings with this and other copper salts, the speaker asserts that conserves containing copper not in excess of 0.050 gramme per kilo may be considered unobjectionable; and so long as the manufacturers of conserves keep within these limits no exception can be taken to the cautious employment of copper for the purpose of preserving the green color, since there are no proofs that chronic intoxication will result. Thus we establish the problem on the only exact fundament—quantitative relations and number.

6. Copper in small quantity has been detected everywhere in articles of food and luxury. (See Chapter I of Prof. Tschirch's work entitled "Copper, from the Standpoint of Legal Chemistry, Toxicology, and Hygiene," etc., etc. Stuttgart, F. Enke, 1893.) To exclude it completely would be "to exclude the plant which takes it up from the soil—to exclude bread and chocolate as injurious to health." Instead, therefore, of complete exclusion, it seems more fitting to fix an extreme limit for the content of copper, which may not be exceeded, permitting the use of copper within such limit. This course would seem all the less objectionable, inasmuch as copper combinations (even in higher doses) are not to be regarded as "poisons" in the same category as arsenic, lead, quicksilver, and phosphorus, since "on discontinuing their introduction into the organism, the functions disturbed by them return promptly to the normal."

7. The application of copper to vines for protection from peronospora, and to potatoes against phytophthora, may be considered harmless, for though the soil has a great capacity for absorbing copper, and the plant takes up copper from the soil, very small quantities are conveyed into the wine and potatoes—quantities which are far less than the proportions established as permissible in conserves.—Address of Prof. A. Tschirch, reported in the *Corr.-Blatt. f. Schweiz. Aerzte.*

The *Texas Health Journal* declares that there is no such thing as a perfectly safe gasoline stove, and gives expression to a very vigorous warning against the dangers attending the use of what is aptly called the new "angel-maker."

In the *Apotheker-Zeitung* appears the following: For the removal of the smell of tobacco from the mouth of the smoker, according to Graham, bromo chloral is well adapted. Place a few drops in a glass of water and rinse the mouth thoroughly.

At the Emergency Hospital at the World's Fair, there were treated 18,500 cases, and there were twenty-three deaths and nine births at the institution. This seems to make a creditable showing for the hospital where so many people, from all sections of the world, were cared for.

The Oklahoma Board of Pharmacy will hold its next quarterly meeting (first of the New Year) at El Reno, on Tuesday, Jan. 2, 1894. All those practicing pharmacy in the Territory, not registered, are requested to attend. After that meeting, the Board will make a general sweep. C. P. Wickmiller, Secretary.

The "Tyson Gold Cure" for drunkards has been exploded in Melbourne, Australia, by proceedings under the "Sale of Poisons Act." The Government analyst discovered that the preparation contained chiefly nux vomica. The Australian *Medical Journal* remarks: "Since the fine and costs were inflicted, ten-guinea fees for the cure have declined considerably."

The *Pharm. Centralhalle*, having been informed that some brands of strychnine nitrate are of no value in exterminating foxes, or of less value than other brands, inquires whether there is really any ground for the query: Is there a variety in the different brands of strychnine? The idea that strychnine is not an integral substance has been repeatedly suggested in the past.

Chas. A. Wengler, employed in the drug store of R. Josenhaus, No. 242 West North avenue, Chicago, Ill., was brutally assaulted by John Beck, a discharged employé, on the evening of Dec. 5th. The unoffending clerk was horribly beaten about the head and repeatedly stabbed with a knife. Beck was angry over the dismissal and "took it out of" the clerk.

Hitherto disorders observed among workmen in hemp have been regarded as originating wholly in mechanical causes, as in the inhalation of vegetable dusts. Dr. L. Salomon, of Savigne l'Eveque, France, who has studied two cases of such disorders, attributes them to intoxication by the active principles of hemp, similar to that produced by hashish.—*Popular Science Monthly.*

What Next?—The *Quarterly Journal of Inebriety* declares that bacterial organisms are essential to give the flavor and quality to the taste of tobacco; that pure tobacco may be inoculated with the bacteria of the Havana leaf, and fermentative changes induced so as to enhance the quality and give it rich flavor.

If this be true, the possibilities in cabbage-leaf traffic are great.

President Klie, in his annual message to the members of the Missouri State Pharmaceutical Association, referred to the pharmaceutical journals as follows: "I cannot refrain from saying a good word for the pharmaceutical journals. Take as many as you can pay for, and take the best. It is a paying investment, provided you keep posted as to their contents. A single number may contain an item which will pay for the journal for several years."

The twentieth annual commencement exercises of the Department of Pharmacy, University of California, were held in Odd Fellows' Hall, San Francisco, on Tuesday evening, Nov. 28th. The graduating class numbered thirty. Addresses were made by various members of the faculty. The valedictory was delivered by J. A. McNamara, and the class history by Frank J. Donnelly. Joseph W. Scamell captured the gold medal, and the second prize (a microscope) was awarded to Harold von der Leith.

Mr. William M. Warren and Miss Mary Buhl, daughter of Mr. T. D. Buhl, were united in marriage at the Fort-street Presbyterian church, Detroit, Tuesday evening, Nov. 28th, Dr. Radcliffe and Dr. Carson performing the ceremony. The church was thronged by the many friends of the bride and groom.

Mr. Warren has long occupied an executive position with Parke, Davis & Co., and received from his associates a complete set of silver. He bears with him the good wishes of all who have learned to know his genial disposition and his manly probity as a business man.

A Modern Leander.—Doctor Judson Daland, a New Yorker, recently performed the remarkable feat of swimming the Straits of Messina, from Scylla to Charybdis. He entered the water at Faro, and, after much difficulty with currents and choppy sea, passed the Rock of Scylla, and after two hours and twenty minutes landed on the coast at Riggio, the distance being about six and a half miles. So far as known the feat has been accomplished but once before, and then by an English naval officer.

Lord Byron's swimming of the Hellespont is thus recalled.

THE *Chemist and Druggist* states that an eminent authority gives the weight of a molecule of hydrogen to be approximately 0.000,000,000,000,000,000,000,04 of a gramme, and adds that by multiplying this inconceivably small number by 55, the atomic weight of iron, we ascertain the weight of a molecule of iron—0.000,000,000,000,000,000,002,2 gramme. In the sulphocyanide test we are able to detect the presence to 0.0000033 of a gramme of iron; dividing this number by the weight of one molecule of iron, we find that this apparently delicate test is unable to indicate to our senses a less number of molecules than 1,500,000,000,000,000.

BY experiments recently performed in the Pasteur Institute in Paris, it has been demonstrated that drinking-water may be completely freed of bacilli by addition of citric acid (one gramme per liter). By adding 6 decigrammes of citric acid, which, moreover, imparts a pleasant taste to the water, the cholera bacilli were killed after a quarter of an hour; typhus bacilli required 9 decigrammes. It is well known that citric acid may be found in all pharmacies at a very cheap price. It also agrees perfectly well with an addition of wine. It will be remembered that Koch had demonstrated long ago that the cholera bacillus is killed by acids.—*Der Pharmaceut.*

THE METHOD of dealing with secret remedies in Germany appears to be simple and efficient, as the following instance shows. Not many months ago some strangers took a house in Berlin, and with great *éclat* gave out that they were prepared to sell a remedy for freckles and pimples at ten shillings a bottle. The day after the opening of the establishment an official notice appeared in the Berlin daily papers under the heading "Police Intelligence," giving the result of the analysis of the drug (it was a weak solution of corrosive sublimate) and the cost of its preparation, namely, three half-pence. The establishment was soon closed.—*Pharmaceutical Journal and Transactions.*

MR. MICHAEL CARTEIGHE, President of the British Pharmaceutical Association, in his address before the American Pharmaceutical Association stated in regard to the condition of the drug business as follows: "I do not believe, with many, that the profession of pharmacy is being lowered. In England, at least, I have found that in all the larger cities educated people as well as medical men respect well qualified pharmacists, and in my judgment the amount of respect that any pharmacist gets from the public is exactly that which he can earn for himself. If he knows his business, and if he honorably carries on that business with refined professional feeling, with all due regard to his conscience as well as to his dollars, such a man will be respected by all."

THE CENTIGRADE thermometer scale has, it is reported, been adopted by the German Government in place of the Reaumur scale, hitherto commonly used in Germany. It cannot be denied that this is a wise step, as the Reaumur scale has little to recommend it. The Centigrade scale, which bears the name of Celsius outside France, was in 1742 proclaimed independently by that scientist, and by Christin of Lyons. Celsius originally made zero the boiling-point and 100 degrees the freezing-point, reckoning degrees downwards. Uniformity in weights and measures is one of the popular demands of the day, and it is quite time the same step should be taken in this country with regard to the Fahrenheit as Germany has done with regard to the Reaumur scale.—*Oil, Paint and Drug Reporter.*

MR. A. WINKLER calls attention in the *Aerztl. Praktiker* to the serious consequences following an abuse of the bicycle, aside from the mischief done by occasional tumbles. The abominable over-exertion which is always entailed by bicycle-racing leads not seldom to pulmonary hæmorrhage, hypertrophy of the heart, and the other consequences of "strain." A thorough wetting on long journeys will cause the rider to contract catarrhal and rheumatic diseases. Moreover, the constant jolting may have a bad effect on the vertebral column, the nervous system, and especially the spinal marrow. Another consequence of excessive riding on the wheel is a peculiar inflammation of the prostate, with excretion. No objection can be made to moderate riding, but Winkler counsels children and young people to leave the wheel alone.

FOREIGN pharmacists cannot exercise their profession in France without having the French diploma. It is in the power of the Minister of Instruction to dispense with some of the necessary examinations. Hospital apothecaries are allowed to practice during an epidemic; this authorization holds good for three months. A pharmacist can only have one shop, and he must inhabit the locality where he carries on his business. After the death of a pharmacist the heirs can carry on the business for a year, provided another pharmacist is placed in charge. It is forbidden to a medical man to have any understanding with a pharmacist concerning the sale of drugs. In those localities where there is not a pharmacist the medical man can supply his patients with medicine. In order to be prepared for urgent cases, medical men, even where there are one or two pharmacists, can keep certain drugs, which will be mentioned in a list drawn up by the authorities. In every department there will be an inspector pharmacist. This body of pharmaceutical inspectors will be chosen by the *Comité Consultatif d'Hygiène*, and ratified by Government.—*American Druggist.*

SELECT TABLES FROM THE 1890 U. S. PHARMACOPŒIA.—At the suggestion of a number of owners of the new U. S. Pharmacopœia, the Committee of Revision has decided to issue, as a separate publication, those of the tables appended to the work which are most generally consulted. These tables will appear under the title: "*Select Tables from the U. S. Pharmacopœia (1890), Reprinted for Ready Reference in Daily Practice. Published by the Committee of Revison,*" etc. The tables will be printed on single sheets (one page on a sheet), on *one* side of the paper only, suitable for being mounted on cardboard, so that they may be hung up at the dispensing counter or in the laboratory. The set will comprise all of the tables, except those showing specific gravity and percentage of acids and alkalies. They will be published at the retail price of 25 cents, with the usual discount to those who purchase in quantity. Messrs. P. Blakiston, Sons & Co. will be the agents.

HEEDLESS DISPENSING.—Some time since a prescription was taken by a reporter to a number of drug stores in Chicago, to see what they would do with it. It was as follows:

℞ Pot. citrat.............................. ʒ ss.
Acid hydro-cyan. dil.......................... ʒ ss.
Syr. Tolu.................................... ʒ iij.
Aq..................................q. s. ad ℥ j.
Misce. Sig.: Dose, dessert to a tablespoonful. Copia.
DR. HAHN.

In seven out of eight stores visited, the prescription was compounded, and "no questions asked." The person presenting it was a stranger to the druggists, and the signature was bogus. A Chicago daily paper comments severely on these facts, and calls upon the Board of Pharmacy to prosecute these druggists for violating their pharmacy law. The affair seems to have created some stir in the White City.—*Exchange.*

THE Arkansas State Board of Pharmacy met in the Senate Chamber in the city of Little Rock, on Wednesday, Nov. 8, 1893, with all the members present except J. M. Anderson, President.

There were nine applicants for examination, of whom the following were successful: Dr. J. S. Porch, Eureka Springs; J. M. Moss, Pine Bluff; E. W. Gazley, Pine Bluff; and H. L. Toland, Mineral Springs.

The next meeting will be held in the same place, on Wednesday, Feb. 14, 1894. Applicants will take due notice that the examinations begin at 9 o'clock A.M. and close at 6 o'clock P.M. promptly, and must be completed between those hours. The sessions will not be held over to accommodate late arrivals.

Parties holding temporary certificates are also notified that these must be presented to the Secretary at that time or they will not be credited on their fees.

W. W. KERR, *Secretary.*
Russellville, Ark.

SALT AS A SWEETENER OF SUGAR.—Salt and sugar are sometimes held to be incompatible or antagonistic in their action on the organs of taste, but it is a common social experience that the addition of the slightest dash of salt adds flavor to sweet coffee, and sugar-cured hams have their own reputation, while meat and vegetables cooked "sour and sweet" are a favorite delicacy in Germany. Prof. Zuntz, at the Physiological Society of Berlin, definitely explained the making of sugar sweeter by the addition of salt. From his experiments he finds that if to a solution of sugar there be added a slight amount of salt and water, so weak that it excites no saline taste, the result is extra sweetening of the sugared water. The weakest of quinine solutions is said also to produce similar results. The explanation given of the above seeming incongruity is that the ever so feeble saltness or bitterness imparts an increased sensibility to the sensation of taste by the simultaneous stimuli, and hence an appreciation of additional sweetness.—*British Medical Journal.*

THE Nebraska State Board of Pharmacy was reorganized Nov. 8, 1893, at Omaha, by the election of the following officers: James Reed, Nebraska City, President; W. D. Haller, Blair, Vice-President; Griff Evans, Hastings, Vice-President; C. M. Clark, Friend, Treasurer; M. E. Shultz, Beatrice, Secretary.

E. Keebaugh, Rising City, Neb.; C. F. Baughan, Ainsworth, Brown Co., Neb.; John Nieman, Fremont, Neb.; Wm. C. Bishop, Sherman Ave., Kyner Block, Omaha; J. A. Roeder, 1323 N. 17th St., Omaha; W. B. Moore, Fairfield, Neb.; C. O. Gilmsdal, Blair, Neb.; Allen E. Ecker, Lincoln, Neb.; W. L. Schultz, Neligh, Neb.; R. C. Hesse, 423 S. 10th St., Omaha; E. E. Crady, Sioux City, Ia. (Belden, Neb.); Robert Bohmansson, 12th and Cap. Ave., Omaha; W. E. Mitchell, Gordon, Neb.; Ira E. Atkinson, Dodge, Neb.; Frank Simon, Oakland, Neb.; Geo. McLaren, Shubert, Neb.; Ben E. Ralston, Wymore, Neb.; Press Colwell, Burlington Junction, Mo.; Emil Hargens, Missouri Valley, Ia.; L. P. Orth, Pender, Neb.; M. M. Hicks, Merna, Custer Co., Neb.; Geo. Heinen, 601 Pierce St., Omaha.

The above named persons were granted certificates of registration by examination.

The drug business in Nebraska is scarcely up to that of last year, and drug clerks are a drug upon the market.

The following committees were appointed by President Reed, for the ensuing year: Finance—Griff Evans and W. D. Haller; Printing and Supplies—M. E. Shultz and C. M. Clark; Violation of Pharmacy Law—W. D. Haller, Blair; Jas. Reed, Nebraska City; C. M. Clark, Friend.

M. E. SHULTZ, *Secretary.*

VEGETARIAN PEDESTRIANS.—The result of a pedestrian contest recently completed between Berlin and Vienna was a triumph for two vegetarian walkers, who came out a long way ahead of their carnivorous competitors. The fact corresponds with other evidence of the enduring power of non-meat-eaters. "If there is one thing certain," says an English journal, remarking on the achievement, "about the races that eat no meat, it is that they can march. Thousands, probably scores of thousands, of Sikhs and Hindostanees would have performed the German feat, and not have thought at the end of it that they had done anything wonderful; and they not only eat no meat, but they are the descendants of men who have eaten no meat for perhaps two thousand years. They have eaten wheat or millet, and drunk plenty of milk; and they can walk rapidly as long as life remains in them. A Sepoy regiment will walk a European regiment to death, and do it on food which their competitors would pronounce wholly insufficient to sustain vigorous life. A regular Hindostanee carrier, with a weight of eighty pounds on his shoulders (carried, of course, in two divisions hung on his neck by a yoke) will, if properly paid, lope along over a hundred miles in twenty-four hours, a feat which would exhaust any but the best English runners." But the writer doubts whether this power of endurance is parallel with what is called physical strength.—*Popular Science Monthly.*

HE PUT HIS FOOT IN IT.—The *National Druggist* is sponsor for the following, which bears its own commentary:

A firm of manufacturing chemists of this city, who are proprietors of an antiseptic chemical, recently received from a physician in a little Texas town a scathing letter, which ran about thus:

> "You claim for your preparation that it will not blister, and that it causes no pain when poured on the skin of an infant. Yesterday, desiring to try its effects on an extensive burn on the body of a child 7 years old (not 'an infant' by any means), I prescribed your preparation mixed with four times its bulk of olive oil. I left the house, and had scarcely reached my office when I was summoned back by the screams of the child, which could be heard nearly two blocks. On arriving I found every point touched by your preparation white as snow and horribly burned. The injury done by the hot iron against which the boy fell was not half as great as that done by your remedy. I have advised the father to enter suit against you, claiming exemplary damages. . . . . The preparation made and sent out by you is an infamous fraud. . . . You ought to be criminally prosecuted."

The above and a good deal more in the way of hard words which we need not quote, caused the hair on the head of the company's manager to rise like "squills" on the fretful porcupine. He was scared, and then he got mad. He sent by express an unbroken package of the genuine material to the physician, with a letter, which we need not quote, that was almost as forcible as the doctor's. In it he denounced the latter's statements as false (a bad break), and further said that if they were true, the material placed upon the wound was spurious, manufactured by the druggist to whom the prescription had been sent.

The doctor happened to be a reasonably fair man, and concluded to investigate. Approaching the druggist, he demanded to see the original package from which the material was taken to fill his prescription. The druggist couldn't show it, and finally admitted that, not having the article, he had manufactured it from a formula that he had found for it in Stearns's *New Idea.* The wrath of the doctor was turned from the St. Louis manufacturers to his whilom good friend the druggist, and he made things warm for the latter for a few minutes.

PERUVIAN BALSAM.—This article is the product of the *Myrospermum salvatoriensis* or *Hoitziloxitl*, which grows almost exclusively on the "Costa del Bálsamo," or "balsam coast," of Salvador, comprised by the southern shores of the departments of Sonsonate and La Libertad.

The balsam is a beautiful tree averaging 100 feet in height and 20 inches in diameter. There are two ways to extract the liquid, erroneously styled Peruvian balsam. The first consists in scraping the skin of the bark to the depth of one-tenth of an inch with a sharp machete in small spaces some 12 to 15 inches square all along the trunk and stout branches of the tree. Immediately after this operation the portions scraped are heated with burning torches made out of the dried branches of a tree called "chimaliote," and after this pieces of old cotton cloth are spread on the warmed and half-charred bark. By punching the edges of the cloths against the tree with the point of the machete they are made to adhere. In this condition they are left for twenty-four or even forty-eight hours (in January), when the rags are gathered and submitted to a decoction in big iron pots. After this the rags are subjected, while still hot, to great pressure in an Indian machine made of strong ropes and wooden levers worked by hand. The balsam oozes out and falls into a receptacle, where it is allowed to cool. This is called raw balsam. To refine it, they boil it again and drain it, after which they pack it in iron cans ready for market.

The other method of extracting balsam consists in entirely barking the trunk and heavy branches of the tree, a process which, as a rule, kills it outright and at best renders it useless for several years. The bark is finely ground, boiled, and submitted to pressure in order to extract the oil, which is considered of an inferior quality to that obtained by the system first described. Both methods are defective, but the latter is ruinous and is forbidden by the authorities.

The name of Peruvian balsam was given to this article because it was first sent from Salvador to Peru in the time of the Spaniards, and from Callao re-shipped to Europe.—[From "Agricultural Resources of Salvador," by G. J. Dawson in U. S. Consular Report.

MANNA COLLECTION IN SICILY.—Before leaving London towards the end of March last for a short holiday visit to Sicily, Prof. Greenish suggested to me that some information might be obtained there on the cultivation of the manna ash and the production of manna. By the kind offices of Signor Hamnett, of Palermo, I am able to give the results of the investigation.

The plantation visited is situated at Villa Grazia, a village on a pleasant slope near the foot of Monte Grifone, about six miles to the south of Palermo. It occupies nearly two acres, the trees planted without regard to regularity, but closely enough to form sufficient shade. The manna ash under cultivation has the appearance of a pollard willow, the parent stem being scarcely above the ground. At the time of my visit the trees were in flower, and proved to be the *Fraxinus rotundifolia.* The proprietor informed me that the stems when ten years old are ready to yield manna. One incision covering one-third of the circumference of the stem is made daily, cutting through the bark from the right to the left transversely, commencing at the base of the stem; the right extremity of the cut is slightly higher up the tree than the left. The season, which is ruled by the weather, usually commences in July and ends in September; during the collection about forty-five incisions are made. By the incisions following each other with regularity, like the steps in a ladder, the exudation runs and hardens in a channel, thus the familiar strip of manna is produced; this in that particular locality is termed "Manna Cannolo." The system of inserting straws or sticks into the incision is not adopted there. In wet seasons, when the exudation is very fluid, a cactus leaf is placed on the ground to receive it as it drips; this and the small and broken pieces are known as "Manna Rottame." The following year fresh incisions are made adjoining the previous season's, each of which occupies one-third of the circumference; the third year the unincised portion of the bark is cut, and the period for yielding manna is at an end. The stems are then cut down near the root; new stems spring up. When sufficiently mature the collection commences. Each root has attached both stems yielding manna and younger ones to replace those exhausted. The average number of stems in use in each tree was four. Each stem yields about half a kilo. of manna in a good season.—J. Slinger Ward, in *Pharmaceutical Journal and Transactions.*

NOTICE TO APPLICANTS FOR EXAMINATION BEFORE THE MICHIGAN BOARD OF PHARMACY.—At a regular meeting of the Board held at Lansing, Nov. 7, 1893, the following resolution was adopted:

> *Resolved,* That, hereafter, all applicants for examination as registered pharmacists must have had at least three years' actual experience compounding drugs in a retail drug store under the supervision of a registered pharmacist; and all applicants for examination as registered assistant pharmacists must have had at least two years' actual experience compounding drugs in a retail drug store under the supervision of a registered pharmacist; but one month's study in a college of pharmacy will be accepted as a substitute for two months' experience as above: *Provided,* That every applicant must have had at least four months' actual experience compounding drugs in a retail drug store, under the supervision of a registered pharmacist.

No certificates of registration will be issued by the Board until the applicant has furnished affidavits from the party or parties with whom he served or studied, showing explicitly, by dates, the length of time the applicant has been under the instruction of the employer or teacher.

All applicants for Registered Pharmacists must be 18 years of age and of good moral character.

All applicants for Assistant Pharmacists must be 16 years of age and of good moral character.

Applicants for examination will be expected to have at least a rudimentary knowledge of chemistry as taught by the simpler manuals of that science.

To be able to read and translate physicians' prescriptions, to point out incompatibilities, correct errors in doses, and describe methods of procedure in dispensing.

To be well versed in the preparations of the United States Pharmacopœia.

To have a general knowledge of materia medica, with reference to doses, source of drugs, parts used in medicinal preparations, antidotes, and treatment in case of poisoning.

To be able to identify specimens of crude drugs and give their names in Latin and English.

Every applicant should have at least such preliminary training in the common English branches as is required for entrance into a high-school.

All applications for examination should be in the hands of the Secretary at least one week before the examination. STANLEY E. PARKILL, Secretary.

The BULLETIN learns with great regret of the death of W. W. Marmon, of Bloomington, Ill., the well known jobber, who has been engaged in the drug business for the past forty-three years. Mr. Marmon was a man of strict probity, popular among his fellow-citizens, respected by his employés, and generally esteemed for his large-hearted charities. The death from apoplexy was sudden and painless. Wm. L. Marmon, the only son, continues the business; he has long participated actively in the management.

⁂

ARKANSAS.

A. L. Morgan, of Camden, has a drug store that any city might well be proud of, as it is artistically arranged, well stocked, and manned by polite clerks.

Business at Pine Bluff is reported very quiet by all the druggists, yet from the steady inflow of cotton and ready buyers one would expect business to be brisk.

In all the minor towns of this State the drug stores are, and will continue to be till January 1st, a mass of holiday presents, toys, etc. The idea of talking drugs, chemicals, etc., is foreign to the thought of the proprietor, and his attention cannot be commanded. His reply is invariably, "I'm not buying till after January." Hence it is valuable time lost on the part of the representative of a chemical or specialty house to visit the small town till after the New Year.

Little Rock:

The C. J. Lincoln Co. report business improving, and in consequence they are preparing for the incoming year by largely increasing their stock.

J. A. Junkind, being a lover of hunting, is a member of the Little Rock Rifle Club, and spent Thanksgiving day with his team at Ft. Smith in a competitive "shoot." Strange to say, they lost the day.

Dr. Bradfield and Mr. Dowdy, the genial proprietors of the largest retail store in the city, are always to be found at their store and ready to extend a hearty welcome to the traveler.

Hot Springs:

This city is one of Nature's odd productions and is well worthy of a visit. The hotel accommodations are equal to those of any large city. Being a health resort and sanitarium, during the winter months it is well stocked with druggists; in fact, there are more drug stores in Hot Springs, in proportion to the population, than in any other spot in the United States, and all seem to be doing well.

E. E. Shendal has formed a partnership with Mr. Angle, and now has a half interest in two stores which enjoy a large patronage.

F. Klein since his return has occupied a small store, but contemplates moving in the near future into larger quarters, and establishing himself as in days of yore.

Quite a large fire occurred in the rear of Sorrel & Carr's and Shendal & Angle's stores. They were badly scared, as the city water was shut off owing to repairs, but fortunately the rain was pouring down and aided in confining the fire to the opposite side of the street till water was furnished.

Business from April till now has been the poorest ever known in the history of the Springs, and all merchants welcome the return of cold weather and the tourist.

Ft. Smith:

John Schaap reports his business increasing every day, and it will not be long ere he will be forced to dispense with his retail department and give his entire time and attention to jobbing.

Business here is generally reported quiet.

⁂

A Fearful Charge.

Dilly (in horrified whisper): Mama, Willy is an infidel.
Mama: An infidel?
Dilly: Yes; he said he don't believe there's any Santa Claus.
—*Christmas Puck.*

⁂

Peroxide of Hydrogen must be kept in a cool place. Do not expect favorable results from its use when it has become deteriorated by age or exposure to air or continual warmth.—*Ex.*

HARD TIMES.

Dick Norris: Did you hang up your stocking for Christmas?
Charlie de Broke: No; I hung up my watch.—*Puck.*

ILLINOIS.

Ruggles & Berry is the style of the new firm at Ashland.

Wm. H. Bundy, of Marion, does a prescription business worth seeing.

Frank R. Milnar, of Litchfield, has a couple of very attractive "pets" in his window.

A. C. Brookings, of Du Quain, is at home in his new room; the Brookings block is the finest in the city.

E. R. Weill, of Murphysboro, has one of the neatest little drug stores we know. He has our best wishes.

C. C. Scott, of Athens, has sold his drug stock to Swarmguin & England. Mr. Scott will retire from the drug business at Athens.

E. P. Brown is now J. O. Christie's head clerk. It takes a good man to do Christie's work, and "Percy" seems to be the right kind.

W. G. Anderson is the proprietor of the "newest" drug store in Pinckneyville. Dr. Clarke is in charge, and the Doctor is a hustler.

P. M. Post, of Murphysboro, will build in the spring. The druggists who can put more goods in a given space than Mr. Post, are few.

The firm of Glenn & Reynolds, of Virginia, has changed to E. L. McCaulley & Co. Dr. C. M. Hubbard becomes one of the firm. John W. Reynolds, of the old firm, will go into business again either there or elsewhere.

Springfield:

John Conant, manager of Dodd's South Side store, recently lost his father.

Dick Fitzgerald, of Broadwell's, has been ill, but is out again.

Dr. Hickman's "canary" has the freedom of the store now.

Chester Bolles is delighting the dog-fanciers this week by displaying a litter of fine English pugs in his window.

Chas. Ryan lost his "Herbaline" wagon in the recent fire.

W. R. Beall is no longer with J. H. Utley. Dr. Utley will do the buying himself from now on.

⁂

New but Good.—Considering the comparatively recent date of its introduction, a surprising amount of evidence has been collected respecting the value of *Fabiana imbricata* in vesical and genito-urinary difficulties. This South American drug is diuretic, tonic, and terebinthinate; acts as a general stimulant to the excretory functions; calms irritability and favors the expulsion of calculi and gravel.

Full information, comprising therapeutic reports, list of Pichi preparations, and various formulas which have been successfully employed, will be furnished on request by Parke, Davis & Co., the original introducers.

PREMATURE.

"Has Evangeline's engagement been announced?"
"Yes; it was announced last evening by her small brother."
—*Puck.*

KENTUCKY.

Among late changes in location we find that of R. E. McRoberts, of Lancaster, who has moved into more commodious quarters in a handsome new brick building a few doors south of his former place of business.

E. A. Bagby, originally of Glasgow, Ky., latterly of California, opens a new drug store in Winchester. He will occupy the building owned by Simpson & Miller. The location seems favorable, and we wish him success.

Tully Witherspoon, of Harrodsburg, now has a Government position, and his neat store is for sale. We are sorry to miss Mr. Witherspoon; though wishing him success in his new departure, we would gladly welcome him back.

Another change decidedly for the better: We now find the popular Harrodsburg drug firm of Smith & Stagg in new quarters just below their old store. They have certainly transferred a considerable portion of the local drug business to the intersection of two streets.

⁂

THE VILLAGE GREEN.

⁂

For mailing calendars, photographs, pictures, etc., there is nothing that equals Mailing Board, manufactured by the Thompson & Norris Co., 10 to 34 Prince St., Brooklyn, N. Y. It combines stiffness with light weight, often saving more than its cost in postage alone.

Stranger: Who owns this drug store?
Apprentice: The boss says I do, but I don't.—*Detroit Free Press.*

⁂

MICHIGAN.

Merle Smith, former proprietor of the Meldrum Pharmacy, Detroit, is pursuing a course of study at Albion College.

S. E. Hart, of Hart & Shaw, Adrian, died Oct. 21st. Mr. Hart was one of the oldest and best known druggists in Southern Michigan.

A modern and well appointed drug store has recently been opened at Oxford under the title, Tunstead & Howard. Dr. C. D. Howard has his nicely fitted office in the rear of the store.

The explosion of a bottle of peroxide of hydrogen resulted in severely cutting the hands of George Morris, a clerk in C. H. Wood's store, Detroit.

A. P. Lincoln, late representative salesman for T. H. Hinchman & Co., Detroit, and quite a favorite on the road, is now their manager. He's a hustler.

Chaffee, Hunter & Lauffer have just opened their new brick drug store at Plymouth. It is well fitted, and is substantially built upon the site of their old one, which was totally destroyed by fire last spring. May such ill-luck never again overtake them!

Burton Van den Bergh, of Alma, keeps cool under trying circumstances, and although his old store opposite the Wright House was completely destroyed by fire on Oct. 15th, in a couple of weeks he opened up again in the next block, and is doing business as though nothing had happened. Next summer, when he moves into his new quarters, we hope he will make the headway Chicago did after her disastrous fire.

The reports of the Michigan wheat crop this month, with rare exception, show that while wheat has made small growth, the plant on Dec. 1st was in fairly healthy condition. The small growth is due to late sowing and dry weather. For the southern counties the average condition is reported at 84 per cent.; for the central, 89 per cent.; and for the northern, 96 per cent.—comparison being with vitality and growth of average years. The corresponding figures one year ago were 82, 93, and 97. The number of bushels reported marketed in the four months August–November is 6,358,371, which is 378,825 bushels less than was reported marketed in the same months last year. John W. Jochim, Secretary of State.

⁂

The rôle played by milk in multiplying bowel troubles, and diseases such as diphtheria, scarlet fever, measles, etc., is recognized by all who are familiar with the investigations of modern science. Walter Mendelson, M.D., of New York, declares in *Babyhood* that the process of sterilizing milk has done more towards lessening infant mortality than any other invention of the past fifty years, and that the Arnold Steam Sterilizer is the best device for the purpose.

A photographer of Atlantic City, N. J., Mr. Shaw, produces a photograph at a single exposure which gives five different images of the same person in different positions. This is accomplished by placing the sitter between two mirrors placed at an angle of 45 degrees to each other. The double reflection between these mirrors produces four images of the person placed in front of them, the principle being the same as that of the ordinary kaleidoscope. The original face is made in profile, and the reflections give the full face, opposite profile, and two rear views.

⁂

NEBRASKA.

Our correspondent has just returned from a trip up the Kearney & Black Hills road, through Miller, Sumner, Eddyville, and Callaway, and though there was not much more than half a crop this year, people are hopeful and trade seems to be very fair.

C. E. Nobes & Co. have one of the best stores in York, and are fortunate in having as manager Mr. J. B. Pinkerton, who is a careful and thorough pharmacist and a popular man. He has just put in hot soda for the winter, and is having a fine trade. The store being on a prominent corner handy for all, it looks as though hot soda would pay well these cold days.

Mr. Schram, of Kearney, the enthusiast on lacrosse, says he would rather see a game of lacrosse than feast, and he backs up the champion team of Nebraska—the Kearneys—with his presence and cash whenever they play. He is also a champion chess-player, and when business is not too rushing can usually be found showing some friend how little the latter knows about the silent game.

Dr. J. G. Test, of Hastings, late Superintendent of the Insane Asylum, has just opened up one of the handsomest drug stores west of Chicago. The fixtures are of light wood, and the soda-fountain, costing $4,000, corresponds to the fixtures. The floor is beautifully tiled, and there are plate-glass mirrors everywhere. Dr. Test is very popular in Hastings, and all predict a fine trade for him.

A. W. Buchheit, the genial Grand Island druggist, who has one of the finest stores in Nebraska, says trade is getting better every day, and judging from the way he and his clerks have to "hustle" in waiting on customers this is not hard to believe. We now understand the unusually happy look on his face the last time we were there—he had just "been and gone and got married." Congratulations are in order.

⁂

In Africa—150° *in the shade.*

Absent Son: I suppose they mean well, but I do wish they wouldn't all send me woolen comforters for my Christmas.

⁂

Parke, Davis & Co. announce the addition of the following to their very complete list of Compressed Tablets:

Peptonizing, Improved, No. 76.

Potassium Permanganate, 2 grains, No. 120.

EQUAL TO THE OCCASION.

Miss Tallmaid was standing under the mistletoe when Charley Sawedoff came in.

"Well," said he, climbing upon a chair, "kisses come high, but we must have 'em."

Then she gave him two for being so bright.—*Puck.*

NORTH CAROLINA.

W. G. Norman has started a new store at Hickory.

Thomas Reese is soon to open a new store at Charlotte.

W. G. Smith, of Asheville, was recently married at Cleveland, Ohio.

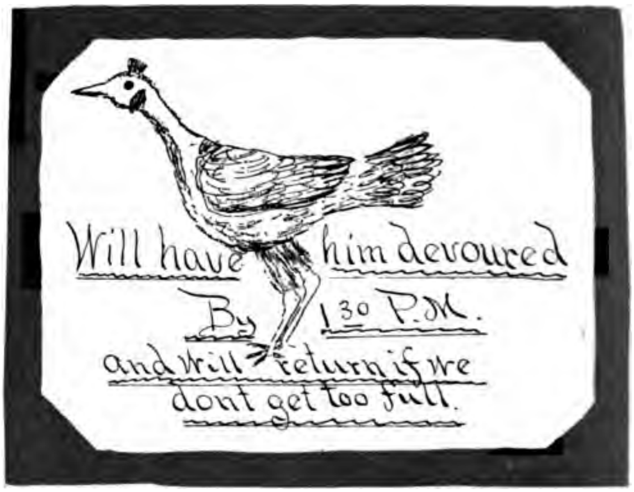
Augustus Bradley has left Henderson, and is now clerking for J. H. Bobbitt, of Raleigh.

B. S. Davis, the efficient drug clerk of R. H. Jordan & Co., of Charlotte, has been sick for several days, but again is at his post.

Penrose Baldwin, one of the best pharmacists in the State, is now clerking for W. C. Carmichael at Asheville. This pharmacy is thriving.

⁂

The following notice was hung upon the inside of the door of the Smith & Myers Drug Co., Crawfordsville, Ind., on Thanksgiving Day, at noon:



Will have him devoured

By 1.30 P.M.

and will return if we

dont get too full.

Mr. Myers returned at 1.30 P.M. Mr. Smith did not make his appearance until 4.30.

⁂

NORTH DAKOTA.

Fargo:

E. A. Hollinshead, for some years first prescription clerk at Katzka Bros.', on Front street, has accepted a similar position with M. D. Flemming & Co. in their new store on Broadway.

In taking an invoice after the great Fargo fire of June last, M. D. Flemming & Co., wholesale and retail druggists, carrying one of the largest stocks of drugs, pharmaceuticals, and sundries in the Red River Valley, found that they had on hand one set of books and one cash register—the remnant of their immense stock. In October, however, they opened again to their old customers and many new ones with a very large and complete stock at wholesale and retail, and in their own commodious new building.

N. Davis, for some years past a State official, has secured the corner store of the new Syndicate block on Broadway, and with Robert A. Brackett, late of St. Paul, as manager, will open a first-class pharmacy. We congratulate Mr. Davis on securing the services of Mr. Brackett, and what will be known in the near future as the Postoffice corner for his store. The arrangement of the stock and furniture shows good taste, and Mr. Davis will not suffer for the necessary trade to make his venture a success.

Bruce Crusoe, one of Fargo's reliable prescription men, has accepted a position in the new store of E. W. Morse & Co.

E. W. Morse & Co. have opened a new pharmacy at 66 Broadway. Mr. Morse is very well known in this section. Mr. Hinsfurter, the "Company," will devote himself to the business interests of the new pharmacy, and to private investments on the Moorhead side of the river. The fixtures and stock are new and handsome throughout.

⁂

SHAMEFUL.

"Your idea for the play is good—but it's been done before," said the manager.

"By whom?" queried the author.

"Shakspere, in *Twelfth Night*."

"Hang it all! There's another good idea spoiled."—*Puck.*

⁂

OHIO.

The appointment is announced of Prof. Fennel to the position of State Chemist.

Elmer Ewing, of Bluffton, is taking a course at the Chicago College of Pharmacy.

Henry Webber, of Canton, has been improving his store with a coat of white and gold.

F. E. Burgess, proprietor of the Oberlin Pharmacy, has removed his stock to a larger store-room.

H. F. Smith has opened a new store, called The Gem Pharmacy, in Oberlin. Success to him.

Messrs. Walding, Kinnan & Marvin, of Toledo, have greatly improved their premises by putting in a plate-glass front.

The Cincinnati College of Pharmacy is entered on what promises to prove its banner year—large classes and good work.

C. B. Ramsberger has purchased the stock of J. E. Lockard and moved it into the store at the corner of East Tuscarawas and Rex streets, Canton.

A very pretty gathering took place in Napoleon recently, when E. H. Haag, of the firm of E. H. Haag & Co., Toledo, was married to Miss May Bowers. The happy couple left for Chicago to pass their honeymoon in the rural quiet (?) of the Windy City.

There is evidently going to be trouble for some of the Ohio druggists. An inspector is going round among them, and it is reported of one city where there are eight stores that he has cases against seven for not employing registered pharmacists, and it is understood the druggists will combine and fight the law. This is about the first move of the kind that has been made. For some time past the pharmacy law in portions of the State has been a dead letter, no attention being paid to it at all.

Cleveland druggists are having their first experience with an out-and-out cut-rate store. For some time past dry-goods stores have been handling a small line of drugs, but now a store has been opened full blast and the cut-rate war is on in earnest. The retailers held a meeting, and a cut was decided upon. A committee was appointed, and each druggist received a list from this committee of such patents as it was decided to cut, and a complete schedule of the prices to be charged. Some patents are being sold at less than cost, and the outcome of the war is anxiously awaited.

⁂

Up in Explosives.

Tommy: Aunt Jane, I should think that you would be afraid to bang your hair.

Aunt Jane (an antique): Why, dear?

Tommy: Why, you might ignite the powder on your face.

(*And then Tommy wonders why Aunt Jane doesn't send him a birthday present.*)

⁂

ONTARIO.

J. R. Phin, a Hespeler boy, has bought out W. M. Kirkland, and is doing a growing trade among his old friends. Mr. Phin's city experience will prove useful to the physicians and the public.

Charles Law & Co. have purchased the business of the late R. W. Petrie, of Guelph, and are adding greatly to the stock and extending the trade of the store. Mr. Law was manager for Mr. Petrie for some time, and has the advantage of acquaintance in the city.

⁂

PENNSYLVANIA.

T. W. Renting, of Titusville, is always busy and courteous. Mr. Renting has a fine store heavily stocked. He enjoys the general favor of physicians in the city.

N. F. Ames, of Corry, has just completed the improvements in his store, which will facilitate his increasing business and enable him to make a more fitting display of his large and well assorted stock.

It is difficult to find a busier man than A. L. Ballinger, of Meadville. He reports that business is improving very rapidly, and predicts a splendid winter's business. A mild form of influenza is prevailing in his city.

W. B. Krosskop, of Oil City, is preparing to make a very fine display during the holidays. Mr. Krosskop has the reputation of handling as fine toilet requisites as any druggist in the State, and his two stores are marvels of neatness and taste.

Wm. Patterson, who started a new store in Wilkinsburg, reports that he is doing a nice business. Mr. Patterson was formerly a clerk in Mr. Holland's store at Pittsburgh, where he enjoyed a reputation as one of the ablest pharmacists in the city.

J. C. Mackintosh can boast of one of the finest stores and stocks in Northwestern Pennsylvania. His windows are trimmed in an artistic manner, and are changed every two or three days. It is worth any druggist's time and trouble (if he happens to be in this part of the country) to call and see Mr. Mackintosh's stock and store.

Peter Webber has just got fairly started in his new store, corner Negley and Penn streets, Pittsburgh. It is finished in oak, with handsome tile floor and steel ceiling of the latest pattern As Mr. Webber himself constructed the building, he was enabled to arrange the store to suit his taste, and it certainly is one of the finest in the city.

⁂

The Aromatic Elixir of Iron, manufactured by F.A. Kattman, of Brooklyn, is offered to the trade and profession with the endorsement of leading physicians, and the claim that it is readily absorbed by the stomach and intestines, is non-astringent, non-nauseating, and perfectly harmless to the teeth.

Micky Branigan says his wife has only one fault; she will swear when she is drunk.—*Life.*

⁂

SOUTH CAROLINA.

H. A. Ligon, of Spartanburg, is doing a very large drug business at that place. He deserves great success.

King & Rhodes, of Florence, were recently burned out, but are now rebuilding, and when their store is completed it will be one of the handsomest in the State.

Geo. Evans, who has been with Sloan & Orr, of Anderson, for a number of years, has formed a copartnership with A. N. Todd, and the new firm will be Todd & Evans. Much success to them.

Mr. Game, of Abbeville, one of the best druggists of the State, is doing a nice business since he formed a copartnership with Dr. Harrison under the firm name of Game & Harrison.

⁂

"Yes," said the old man, addressing his young visitor, "I'm proud of my girls and should like to see them all comfortably married; and as I've made a little money they won't go to their husbands penniless. There's Mary, 25 years old and a real good girl. I shall give her a thousand pounds when she marries. Then comes Bet, who won't see 35 again, and shall have two thousand, and the man who takes Eliza, who is 40, will have three thousand with her." The young man reflected a moment or so, and then nervously inquired: "You haven't one about 50, have you?"

SOUTH DAKOTA.

John Huecker, of Madison, has his goods and fixtures in place in his new pharmacy and is open for business.

D. S. White & Son, of Flandreau, can offer the druggists of the Northwest exceptional inducements in the handling of their "Hair Grower." Write them.

Guinter & Dow is the name of the new firm succeeding W. H. Nelson, at 123 Phillips avenue, Sioux Falls. G. G. Guinter is an old-time pharmacist, formerly of Chicago and later of Parker, S.D.; the prescription department will be under his supervision. E. W. Dow is not a druggist, and will give his time to assistance in the general business.

⁂

DIRECT TREATMENT.

Rathbone: So the doctor told you your wife was looking paler than she ought to, did he? What does that mean for you—Florida or California?

Meriwether: No,—rouge.—*Puck.*

⁂

TEXAS.

Messrs. Brooks & Halvorsen, of Clifton, are doing a capital retail drug business.

Messrs. Morrison & Hefley, of Waco, have one of the best-paying retail drug stores in Texas.

W. H. Minton, of Stephenville, has a beautiful store and is doing a nice prescription business.

S. S. Davis, of Dublin, is doing a brisk retail business. Mr. Davis is "up to date" in his line.

R. G. Hamill, of Temple, has his store neatly arranged, and is doing a good drug business.

Ed. E. Dismoke, of Waco, has fitted up his drug store attractively, and is doing a good business.

T. L. Rogers, of Morgan, enjoys all the independence of a good business, yet gives perfect satisfaction.

Messrs. Reynolds & Johnson, of Moody, have a large prescription business. Their store is very attractive.

Dr. J. F. McCarty, of Comanche, has one of the best-paying retail drug stores in Texas. The Doctor is a live druggist.

Messrs. Lyons & Canfield, of McGregor, are doing their share of business in the drug line. They have a handsome store.

The Dublin Drug Co., of Dublin, have moved their fine stock of drugs and chemicals further up town, and have a good trade.

⁂

THEY WERE.

"Are you ready for the question?" asked the President of the Woman's Club.

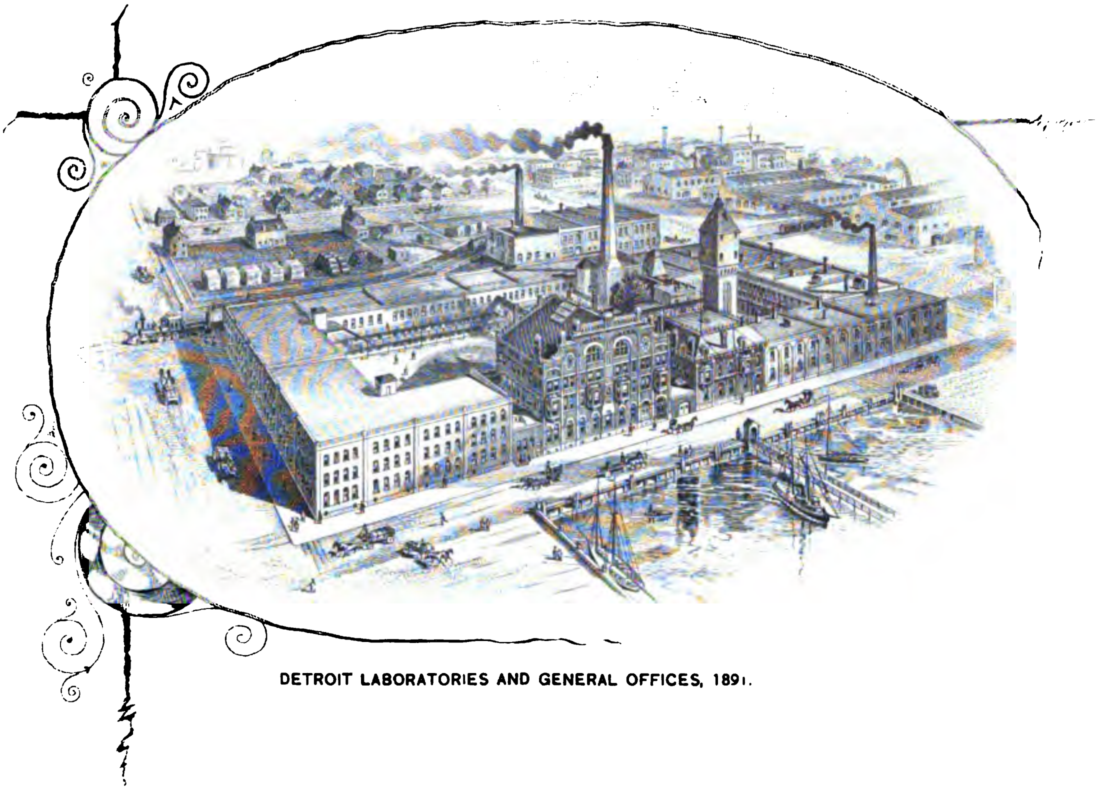
"Yes," was the instant reply from every unmarried woman in the house.—*Puck.*

⁂

VIRGINIA.

McFalls & Thomas have just opened at Danville, and have one of the handsomest drug stores in the State.

T. F. Knock, of the firm of O. P. Hare & Co., Petersburg, does one of the best drug trades in the State, and is, by the way, one of its best pharmacists.



DETROIT LABORATORIES AND GENERAL OFFICES, 1891.

PARKE, DAVIS & CO.,

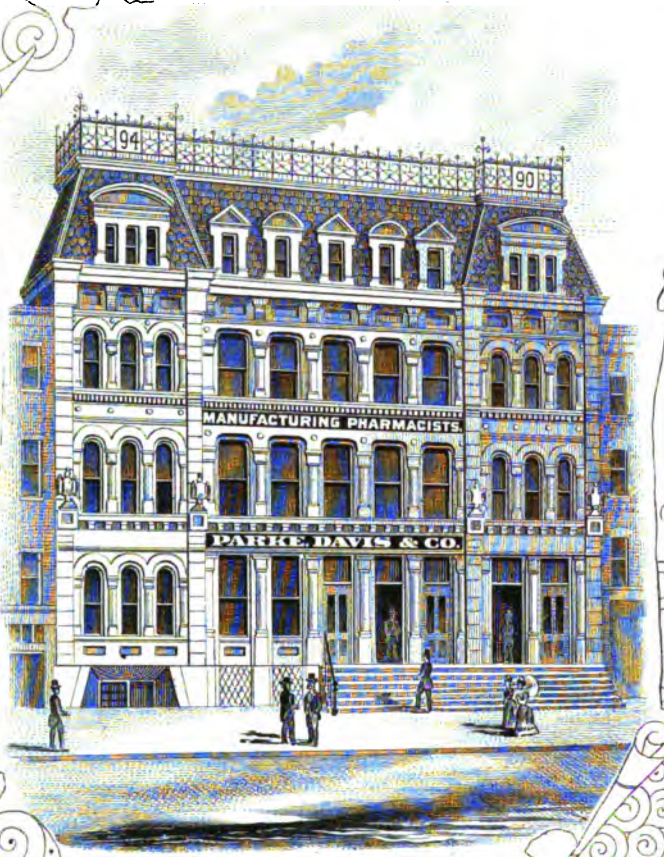
Manufacturing Chemists.

Manufacturers of Pharmaceutical Preparations, Fine Chemicals, Digestive Ferments, Empty Capsules and other Gelatin Products, Pressed Herbs, and Importers and Dealers in Crude Vegetable Drugs.

From 1867 until 1873, Parke, Davis & Co., whose extensive plant is represented above, found room in the humble quarters pictured in the last cut of this article. In the latter year it removed to its present location, at first occupying only a small portion of the site. The steady and rapidly increasing growth of its business, induced by the superior excellence and reliability of its medicinal products, as also by its policy of observing the mutual rights and obligations of the wholesale and retail druggist and the physician, required such successive additions to its buildings, that the laboratory and offices, in which 695 people find employment, now cover over five acres of floor space, while the stability of its financial concerns is backed by a paid-up capital stock of one million dollars.

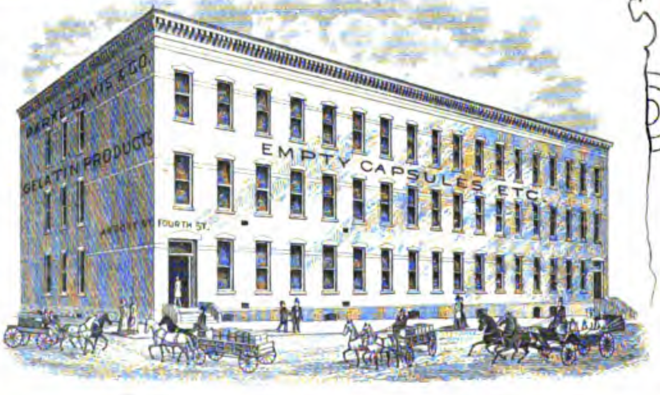
The same exigencies have necessitated the establishment of branch offices at New York, Kansas City, London, Eng., and the branch laboratory as described on page 3 at Walkerville, Ont.

The laboratories are all equipped with the latest and most approved apparatus for the manufacture of medicinal products, and every aid in machinery is afforded skilled employés to assist in producing the finest pharmaceutical preparations possible.



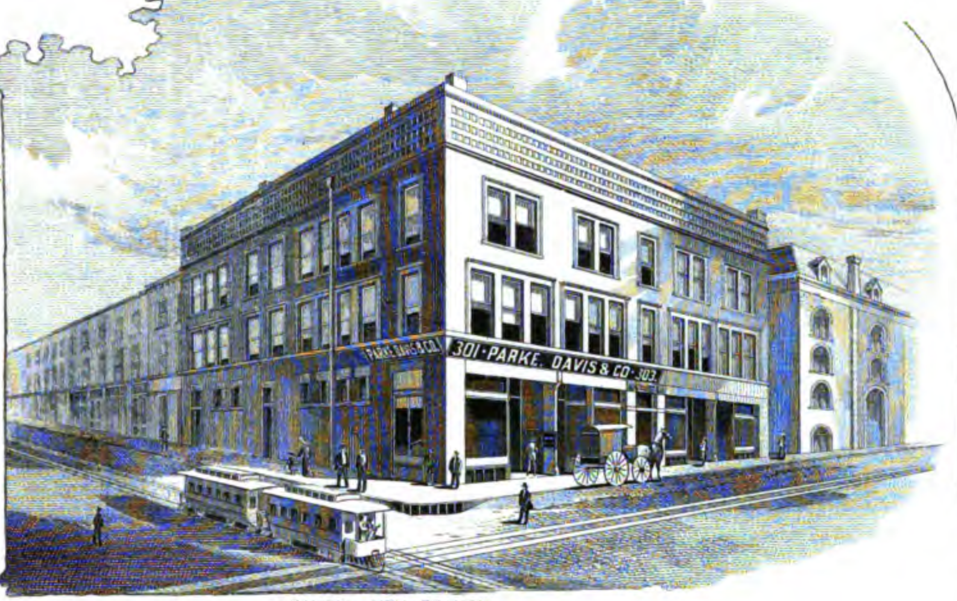
NEW YORK OFFICE AND WAREHOUSES, 90, 92, AND 94 MAIDEN LANE.

IN addition to the manufacture and sale of medicinal products, Parke, Davis & Co. conduct a very large business in the importation and sale of crude drugs in original bales and packages. No other house has the facilities which this enjoys for securing full stocks of crude drugs, properly identified, gathered and cured in their respective habitats, by its own agents and correspondents These transactions are carried on through the New York branch which, located first at 60 Cedar Street, was obliged to move for more room to 60 Maiden Lane and 21 Liberty Street, later to add 218 Pearl Street for warehouse purposes, and has now again been obliged to seek still more room in the large building here portrayed—90, 92, and 94 Maiden Lane, and 9 and 11 Cedar Street. The New York branch also affords a convenient source of supply of the pharmaceutical products of the house to the Eastern trade, as well as an available forwarding point for the benefit of its European customers, who are many.



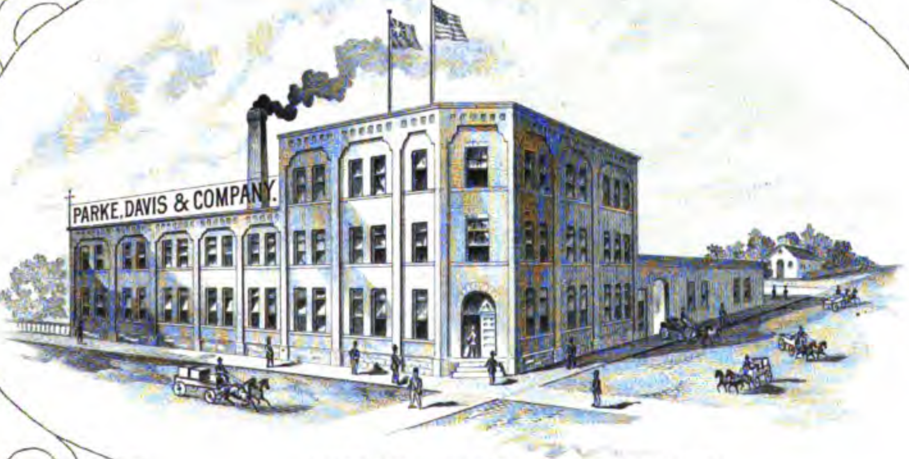
GELATIN CAPSULE LABORATORY, DETROIT.

THE above building, situated on the corner of Fourth and Abbott Streets, Detroit, is wholly occupied in the manufacture of empty gelatin capsules, and the entire outfit is marketed by Parke, Davis & Co., who first introduced this efficient form of disguising nauseous medicines to the medical profession. Besides the empty capsules this house supplies a full line of soluble elastic and hard filled capsules.



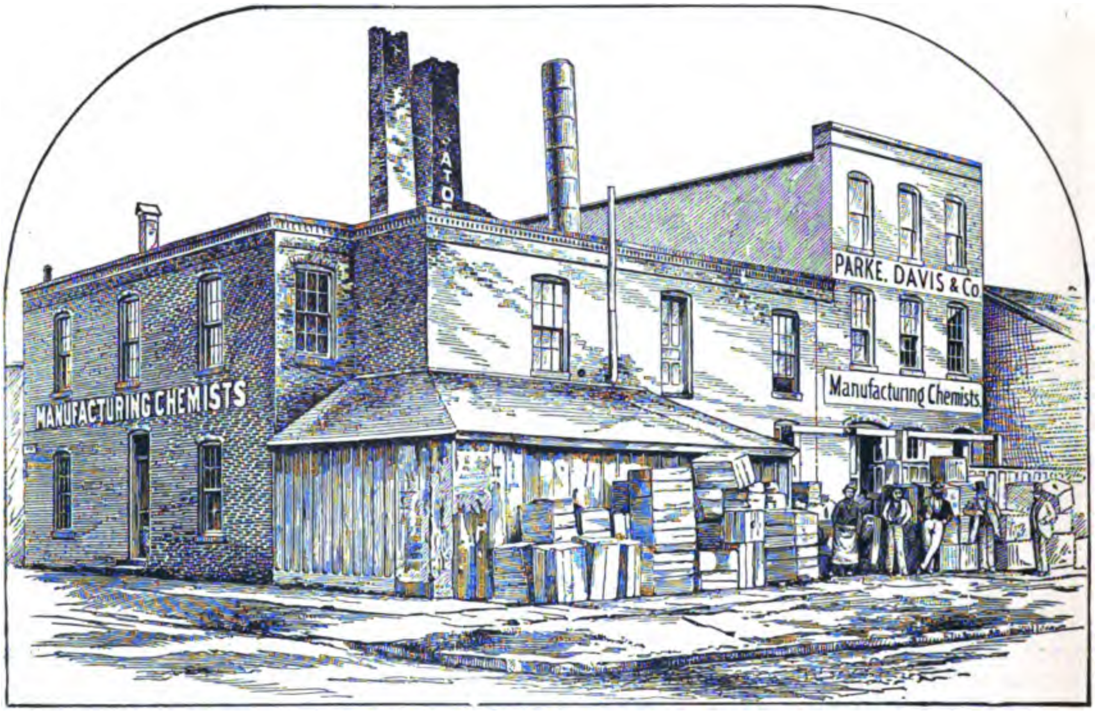
KANSAS CITY BRANCH.

THE urgency of the trade in the western portion of the United States compelled Parke, Davis & Co. about two years ago to establish a branch office at Kansas City, Mo., from which orders could be more expeditiously filled than from the home office at Detroit. This office is located at 301 and 303 West Eighth Street, and is faithfully depicted in the above view.


PARKE, DAVIS & COMPANY.

LABORATORY, WALKERVILLE, ONTARIO, CANADA.

FOR many years the medical profession of Canada, in common with the physicians of the United States and Europe, have indicated their preference for the uniform and reliable products manufactured by this house, thus occasioning a large and growing demand therefor in the Dominion, the better to supply which a completely equipped laboratory, now in full operation, was erected at Walkerville, Ont., in 1890. This laboratory is directly across the Detroit river, about a mile from the main laboratories in Detroit, and has a frontage of 140 with a depth of 279 feet.



ORIGINAL LABORATORY, 1867 TO 1874.

THE above is the seed from which has sprung the immense business just sketched. The secret of the growth of this house, which is phenomenal even when compared with any manufacturing business in the world, lies in three underlying principles of its business methods: The superior quality and uniformity of its products; its devotion to the mutual interests of pharmacists and physicians; and its enterprise in the investigation of new drugs, eligible forms of exhibiting old remedies, and improved processes of manufacture. These investigations have resulted in bringing to the attention of the medical profession such remedies as Cascara Sagrada, Grindelia Robusta, Guarana, Coca, Yerba Santa, Tonga, Manaca, Chekan, Boldo, Pichi and Jaborandi. Several of these have found a place already in the Pharmacopœias of America and Great Britian, and it is not easy to understand on what principle of selection some of the others have been ignored.

PARKE, DAVIS & CO.

ARE ALSO SOLE AGENTS FOR

THE MOSQUERA-JULIA FOOD CO.'S SUPERIOR FOOD PRODUCTS.

MOSQUERA'S BEEF-MEAL,
a predigested, assimilable powdered meat, representing in actual nutritive value six times its weight of good, lean beef.

MOSQUERA'S BEEF-CACAO,
which makes a delicious beverage when prepared as chocolate.

MOSQUERA'S BEEF PEPTONE,
soluble, palatable, and specially adapted for rectal alimentation.

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VOL. VII
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PRIMLEY'S CALIFORNIA PEPSIN CHEWING GUM

AND IN EACH BOX PLACES A DECK OF

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CARDS THAT WILL RETAIL FOR FROM 35 TO 50 CENTS.

ALL WHOLESALE DEALERS SELL IT.

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Makes a perfect Syrup for the Soda Fountain, greater in Quantity, more delicate in Flavor, and more Soluble than any other Chocolate. Convenient, always Uniform, and Free from Grease and Sediment. Adapted to Hot or Cold Soda.

1-lb. and 5-lb. Tins. (1-4 lb. samples free on request.)

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and

Hot Drinks

are two opposites that naturally come together at your soda fountain. When that customer comes in looking half frozen, she will appreciate you calling her attention to your "Hot Bouillon" or "Hot Beef Tea." So will you; it will thaw her into a buying humor.

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to make them with? Solid or fluid. It dissolves quickly—it leaves no streaky or sticky sediment to disgust her as she looks into the bottom of the cup. *Dainty*—nutritious—easily handled—and then it is so palatable. Can you ask more?

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Literature upon our products for your physician friends on request.

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No. 1 SOAP CUTTER.

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Discount to the Trade, 50 per cent.

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1657.	¼ pint	36 dozen	$ 9.00
1658.	½ pint	24 dozen	12.00
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1660.	6 to Gallon	12 dozen	24.00

Prices Subject to our Current Discount on Flint Perfumers' Ware.

ANTISEPTIC MEDICINE DROPPER.

A pipette of improved form is ground into the neck of the bottle as a stopper, the whole forming an air-tight container.

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Discount to the trade, 50 per cent.

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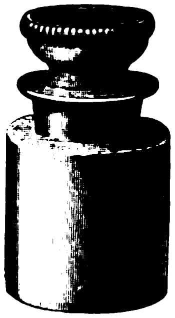

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—FOR—

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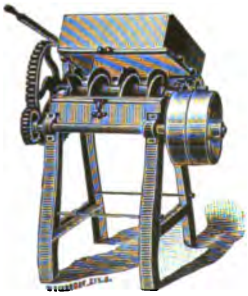

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may consist of one baby, two babies,
a house full of babies, or no babies, and yet he needs the

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Needs it to supply to families who wish to cure a sick baby.
Needs it to supply to families who wish to keep a well baby from being sick.
Needs it to supply to families who must have milk free from disease germs.
Needs it to supply to families for hundreds of purposes in nursery or sick-room.
Needs it because it's a satisfactory and profitable apparatus to sell.
Needs it because we make it to his interest, and if he will write us we will forward him attractive inducements.

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High or low temperature.

See Page 7.

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[FLUID EXTRACT]

IN RESPIRATORY INFLAMMATIONS.

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Send for complete descriptive literature of our newer remedies for respiratory affections.

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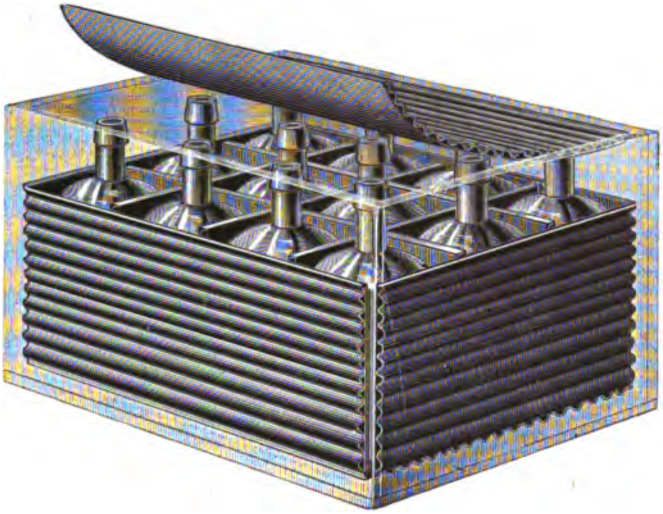

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Samples with estimates furnished on receipt of bottle or the exact dimensions, stating width each way and the height to shoulder and top.

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STERILITY IN THE WOMAN

AND ITS TREATMENT.

—BY—

DR. DE SINETY.

TRANSLATED BY E. P. HURD, M. D.

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Sterility Due to Causes Existing in the Uterus.
Uterine Deviations.
Metritis.
Tumors of the Uterus.
Affections of the Tubes.
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Troubles of Menstruation.
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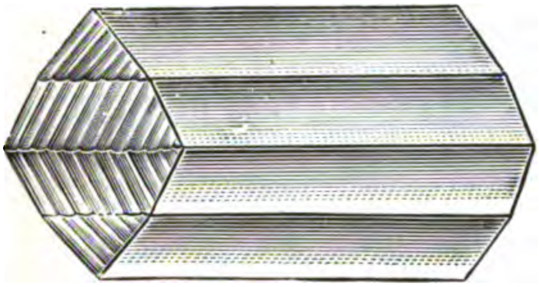

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THIS ELIXIR IS PREPARED FROM THE CHEMICALLY PURE SALTS. RESULTS CAN BE LOOKED FOR FROM ITS ADMINISTRATION THAT COULD NOT POSSIBLY BE EXPECTED FROM THE COMMERCIAL SALTS.

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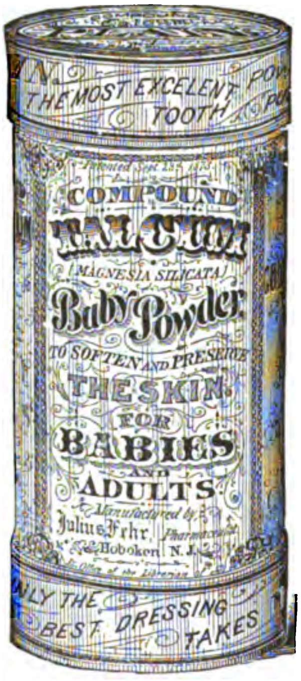

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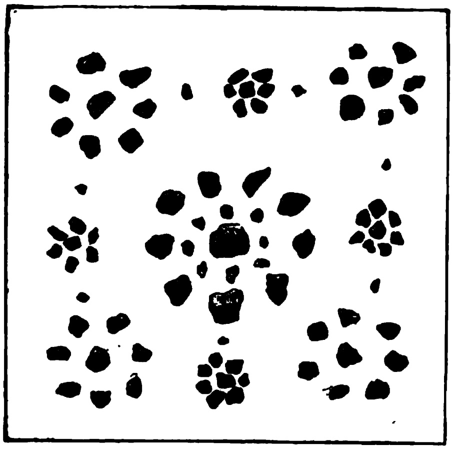

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BY

F. A. FLÜCKIGER, Ph.D., M.D.

AUTHORIZED ENGLISH EDITION.

Translated, Revised and Enlarged by J. B. Nagelvoort, Analytical Chemist to the Pharm.-Chem. Laboratory of Parke, Davis & Co.

[WITH PORTRAIT AND AUTOGRAPH LETTER OF THE AUTHOR.]

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A year ago Prof. Flückiger published a small volume, wherein a selection of organic chemical preparations, of importance as medicine, were described. Of this work an American edition has just appeared, from the pen of our previous compatriot J. B. Nagelvoort. for which he deserves much credit. Reactions are found in this edition for many articles not appearing in the original, as for Aconitin, Andromedotoxin, Bromoform, Carpain, Digitalin, Gelsemin, Hydrastinin, Paraldehyde, etc. Æsculin is treated also. to prove the difference between this glucoside and gelsemic acid, which are often considered to be identical. Some articles of the German edition are enlarged considerably, *e. g.*, on Brucin, Berberin, Homatropin, Hyoscin, Hyoscyamin, Strychnin. We could wish that the author had described a little more exactly what he means concerning digitalin. The statement, "this solution foams when shaken," is true if applied to digitonin, not digitalin, while the insolubility in chloroform proves the absence of digitoxin. We can warmly recommend the use of this book, which has been published in an exquisite form.—PROF. DR. H. NEFERS BETTINK in *Ned. Tijdschr v. Pharm.*, *September*, 1893.

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